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FINAL ENVIRONMENTAL IMPACT STATEMENT

for the

RED ROCK CANYON RECREATION LANDS

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FINAL
ENVIRONMENTAL IMPACT STATEMENT
on the
RECREATION MANAGEMENT PLAN

for

RED ROCK CANYON RECREATION LANDS
Las Vegas, Nevada

PREPARED BY: Nevada State Office, Reno, Nevada and
Las Vegas District Office, Las Vegas, Nevada
Bureau of Land Management
Department of the Interior

Curt Berklund
DIRECTOR, BUREAU OF LAND MANAGEMENT

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SUMMARY

Final Environmental Statement

Department of the Interior, Bureau of Land Management

1. Type of action: (X) Administrative ( ) Legislative

2. Brief description of action:

   The major Federal action described in this statement is the implementation of a recreation management plan for full development of the Red Rock Canyon Recreation Lands.

   The Red Rock Canyon Recreation Lands consists of 62,000 acres of National Resource Lands and 2,000 acres of private land. The area is located 15 miles west of Las Vegas, Clark County, Nevada.

3. Summary of environmental impact and environmental effects:

   A. Vegetation removal & destruction.
   B. Soil disturbance.
   C. Wildife displacement.
   D. Public use concentration.
   E. Aesthetic degradation.
   F. Decreased water quality and quantity.
   G. Increased air pollution.
   H. Increased noise.
   I. Increased public enjoyment and education.
   J. Degradation of primitive & natural environmental values.

4. Alternatives for management discussed:

   The principal alternatives to the proposed action of full development of the Red Rock Canyon Recreation Lands are:

   I. Full development below the escarpment with limited development above the escarpment.
   II. Limited development below and above the escarpment.
   III. Full development below the escarpment and maintenance of the natural environment above the escarpment.
   IV. Restricted development along existing corridors below the escarpment and maintenance of the natural environment elsewhere.
   V. No further action (utilizing the area in its present condition).
   VI. Development by the Nevada State Park System.

5. Comments on the draft statement were requested from the agencies listed on the reverse side. Those who commented are indicated by an asterik.

6. Date draft statement was made available to CEQ and the public

   Draft statement: January 31, 1974

   Final statement: DEC 3 1975

Federal

*Environmental Protection Agency

Department of Agriculture

- U.S. Forest Service
- Soil Conservation Service

Department of Defense

- Department of the Army - Corps of Engineers

Department of Housing and Urban Development

Department of the Interior

- *Geological Survey
- *Bureau of Mines
- *Bureau of Outdoor Recreation
- *Fish and Wildlife Service
- *National Park Service
- *Bureau of Indian Affairs
- *Bureau of Reclamation
- *Bureau of Land Management

State of Nevada

State Planning Commission

Department of Highways

*Colorado River Commission of Nevada

Department of Health and Welfare

*Nevada State Museum

Desert Research Institute

*Nevada State Park System

Department of Conservation and Natural Resources

Division of Water Resources

Department of Economic Development

Nevada Fish and Game Commission

SUMMARY OF DEVELOPMENTS

	New Roads (Miles)			New Facilities					
	Above the Escarpment	Below the Escarpment	Total	Camp Sites	Picnic Sites	Trailheads	Overlooks	Visitor Center	Admin. Center
Proposed Action	20	9	29	5	7	5	1	1	1
Alternative #1	3	9	12	5	7	5	1	1	1
Alternative #2	3	0	3	3	4	3	1	1	1
Alternative #3	0	9	9	3	5	5	0	1	1
Alternative #4	0	0	0	1 or more	1 or more	2 or more	0	1	1
Alternative #5	0	0	0	0	0	0	0	0	0
Alternative #6	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

SUMMARY OF MAJOR IMPACTS

	Aesthetics	Primitive and Natural Environmental Impacts	Soils	Water	Wildlife	Recreation
Proposed Action	Roads & facilities above & below the escarpment. Many visible cuts & fills on Segment B and Crestline Drive.	Loss through development and use.	Disturbance during construction compaction and erosion through use.	Possible loss of unique Pine Creek flora. Destruction of vegetation by construction & use.	Intrusion of people & facilities into critical habitat and near springs. Possible increased harassment & poaching.	Numerous facilities & recreational opportunities.
Alternative #1	As above without the Crestline Scenic Drive. Road into Rams-Head.	Without the Crestline Drive values above the escarpment would be better protected.	Same as above.	Same as above.	Less impact without the Crestline Drive.	Opportunities above the escarpment limited to Ramshead, hiking, and horse riding.
Alternative #2	Same as Alternative #1. Existing Willow Spring Road substituted for Segment B.	No roads or facilities above the escarpment. Existing Willow Spring Road substituted for Segment B.	No impacts above the escarpment. Existing Willow Spring Rd. substituted for Segment B.	No impacts above the escarpment. Deletion of Segment B limits access to Pine Creek.	No impacts above the escarpment. Use of existing road reduces visitor access to wildlife areas.	Opportunities above the escarpment limited to hiking and horse riding. Pine Creek accessible only by hiking.
Alternative #3	Similar to proposed action below the escarpment. No impacts above the escarpment.	Preservation above the escarpment. Similar to proposed action below.	No impacts above the escarpment. Similar to the proposed action below.	No impacts above the escarpment. Similar to proposed action below.	No impacts above the escarpment. Similar to the proposed action below.	Opportunities above the escarpment limited to hiking and horse riding. Numerous facilities below escarpment.
Alternative #4	Max. protection above & below the escarpment. Impacts restricted to existing corridors.	Max. protection above & below the escarpment. Impacts restricted to existing corridors.	Max. protection above & below the escarpment. Impacts restricted to existing corridors.	Max. protection above & below the escarpment. Impacts restricted to existing corridors.	Max. protection above & below the escarpment. Impacts restricted to existing corridors.	Facilities restricted to existing corridors. Much of the area limited to hiking and horse riding.
Alt. 5	Slow deterioration due to unmanaged use.					
Alt. 6	Impacts unknown. Will depend upon State of Nevada plans.					

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F. Comments of Private Individuals

I. DESCRIPTION OF THE PROPOSAL

A. Introduction

The proposed action involves the development of the Red Rock Canyon Recreation Lands 15 miles west of Las Vegas (see map 1, page I-2). This is a recreation area under the cooperative management of the Bureau of Land Management and the Nevada State Park System.

The proposed action is based upon a comprehensive master plan prepared by the BLM in 1968 (see Appendix I). This plan is the highest level of development that will be considered by this impact statement. Some modifications to the master plan have been incorporated into the proposed action to take into account the many changes that have occurred in the area since the time of the plan's conception. Changes include the purchase of the Spring Mountain Ranch (also known as the Wilson Ranch, Krupp Ranch, Bar Nothing Ranch and Sandstone Ranch) and the Pine Creek Ranch by the Nevada State Park System and acquisition of La Madre Canyon and Ash Creek by the BLM through exchange. (See map 2, page I-3 for ownership patterns.)

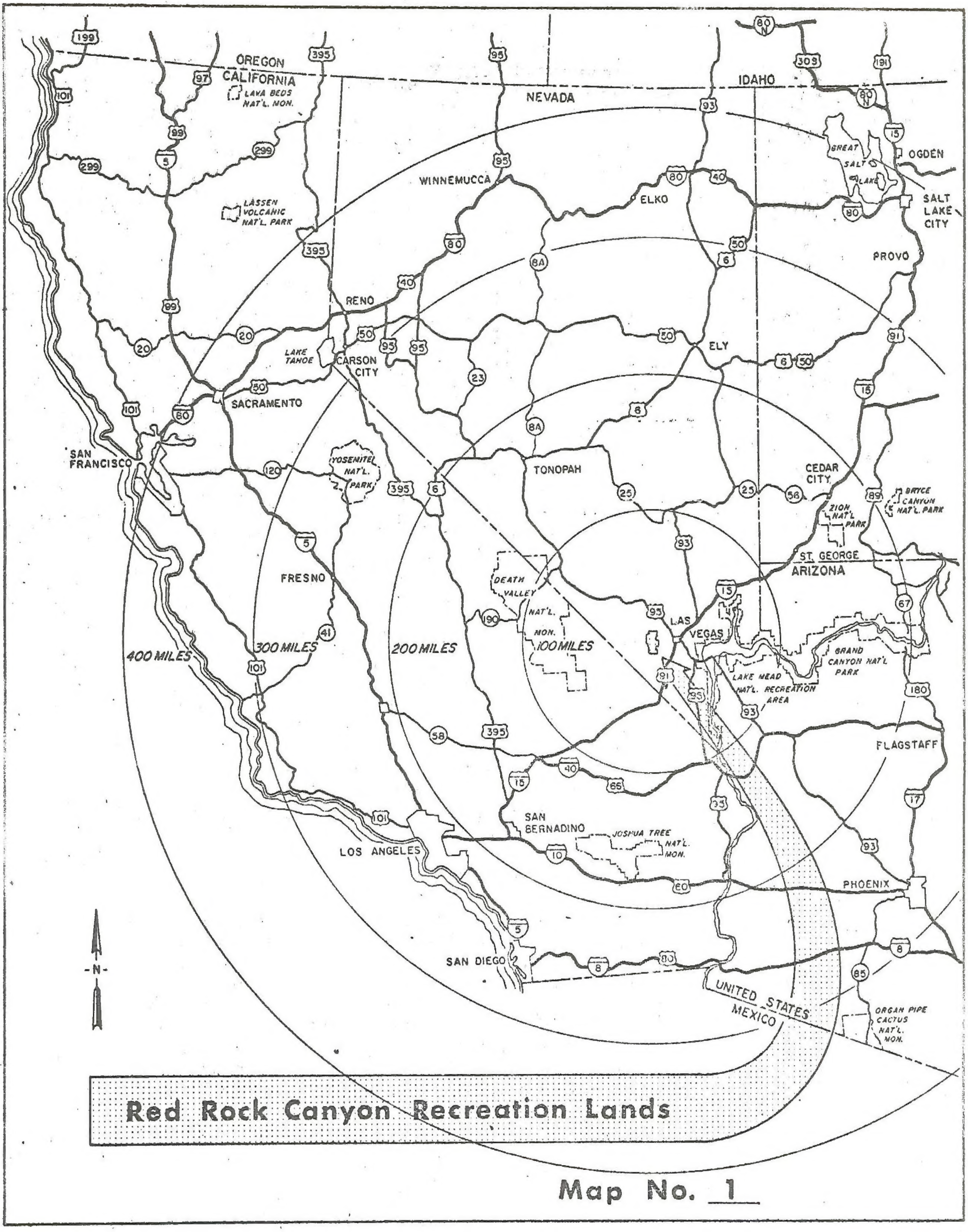
Also discussed are six alternates to the proposed action. All of these alternatives are alternate recreation use plans since the Red Rock Canyon Lands were designated and dedicated to recreation lands in 1967.

Also considered are six alternatives to the proposed action. Since the Red Rock Canyon Lands were dedicated and designated as recreation lands by the Secretary of the Interior in October 1967, only alternates that are recreation use oriented were considered.

Within these limitations, a number of other uses may be compatible. During the BLM planning process (URA-MFP) the area above the escarpment was identified as having primitive area qualities. The area below the escarpment was included in a suggested wild horse and burro range during this same process.

B. Developments Included in the Proposed Action

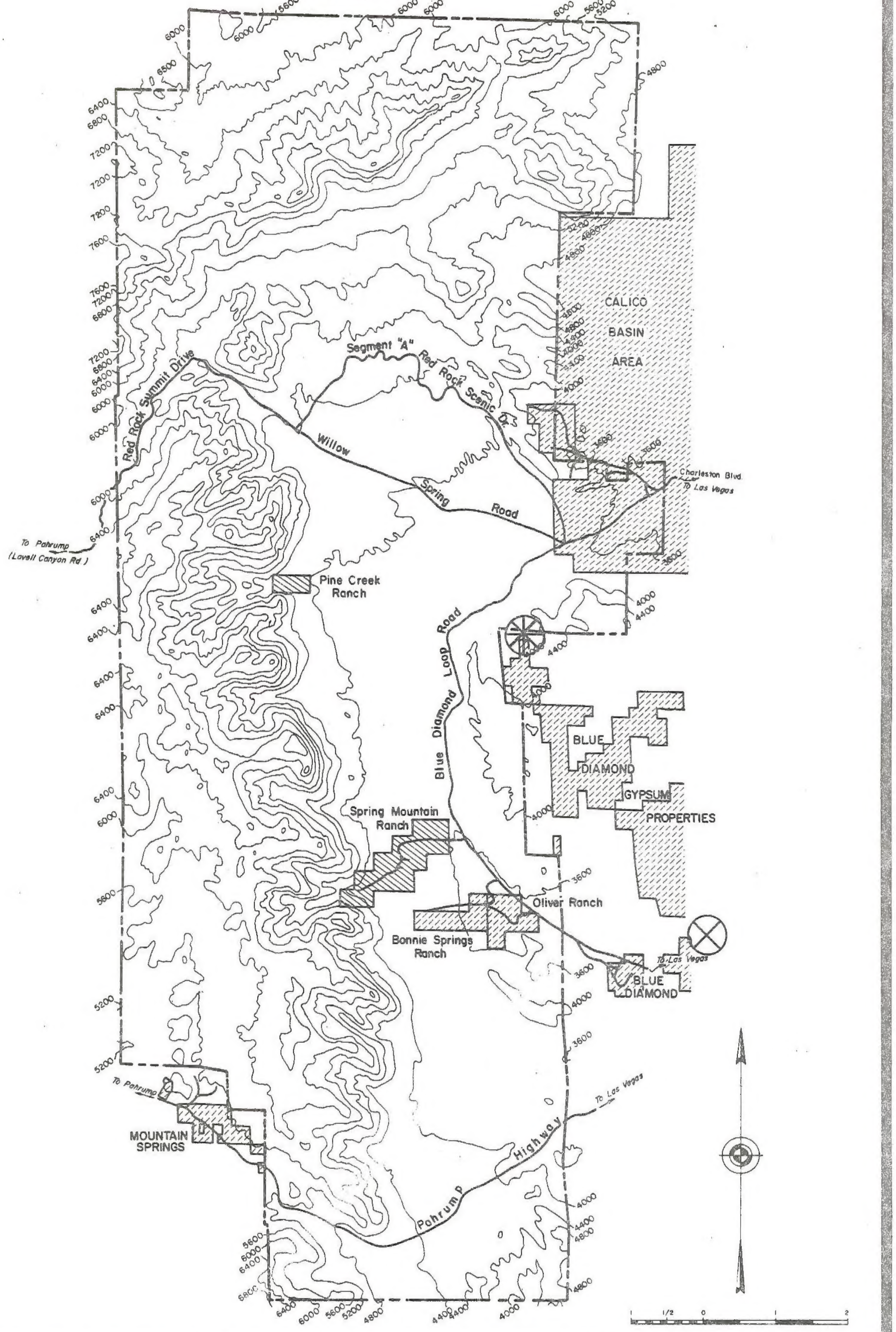
The proposed action is directed toward offering a broad range of recreational opportunities balanced with considerations of the fragile environment of the Red Rock Canyon Recreation Lands. The general scheme of development is based on providing recreational opportunities for both intensive and extensive activities both above and below the escarpment. Stress is placed on constructing facilities which will enable users to enjoy and appreciate the outstanding natural features of the Red Rocks. The proposed action allows for convenient public access to a number of the most significant natural sites.



Red Rock Canyon Recreation Lands

Map No. 1

OWNERSHIP



▨ PRIVATE

▧ STATE

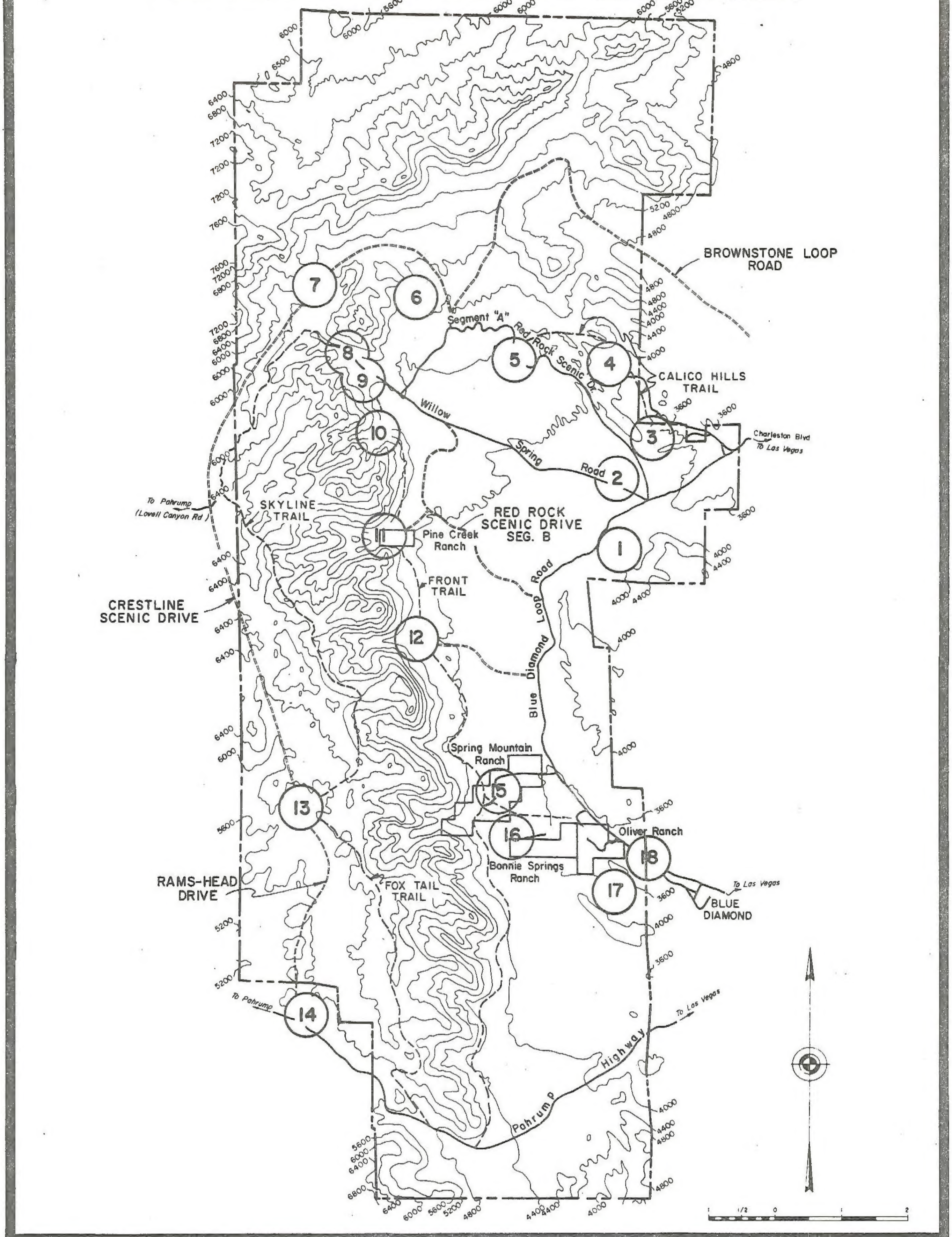
☐ NATIONAL RESOURCE LANDS

⊗ EXISTING BLUE DIAMOND GYPSUM MILL

⊛ PROPOSED BLUE DIAMOND GYPSUM MILL

MAP 2

PROPOSED ACTION GENERAL DEVELOPMENT



1 BLUE DIAMOND ADM. CENTER
2 VISITOR CENTER
3 RED SPRINGS
4 ASH SPRING
5 SANDSTONE QUARRY
6 WHITE ROCK SPRING
7 LA MADRE CANYON
8 WILLOW SPRING (ROCKY GAP)
9 LOST CREEK
10 ICE BOX CANYON
11 STATE AREA
12 OAK CREEK
13 RAMS-HEAD
14 MOUNTAIN SPRING ADM.
15 STATE AREA
16 COMMERCIAL AREA
17 SANITARY LANDFILL
18 CONTACT STATION

—— EXISTING ROADS
═ ═ PROPOSED ROADS
- - - PROPOSED TRAILS

MAP 3

Table 1
Proposed Action Developments

Above the Escarpment*

- La Madre Canyon
  - Campground
  - Archery Range
- Rams Head
  - Campground
  - Picnic Area
  - Trail Head
  - Corral
  - Viewpoint (on foot)
  - Overlook (by car)
- Mountain Spring Administrative Site
  - Contact Station
  - Housing
- Crestline Scenic Drive
- Rams-Head Drive
- Skyline Trail
- Foxtail Trail

Below the Escarpment

- Sandstone Quarry
  - Picnic Area
  - Trail Head
- White Rock Spring
  - Picnic Area
  - Overlook
- Willow Spring (Rocky Gap)
  - Campground
  - Trailhead
- Lost Creek
  - Picnic Area
- Ice Box Canyon
  - Campground
- Pine Creek Ranch
  - Picnic Area
  - Trail Head
  - Guard Station
- Ash Spring
  - Picnic Area
  - Trail Head
- Red Springs
  - Picnic Area
  - Play Ground
- Oak Creek
  - Campground
  - Trailhead
  - Play Area
  - Access Road
- Visitor Center
- Blue Diamond Administrative Center
- Spring Mountain Ranch
  - Working Ranch
  - Lodge*
  - Guided Tours
- .Sanitary Landfill
- .Contact Station
- Red Rock Scenic Drive Segment B
- Brownstone Loop Road
- .Calico Hills Trail
- Front Trail

*The escarpment is the sandstone formation running north-south dividing the recreation lands into two elevations and use areas.

The levels of picnicking and camping development for the recreational sites are shown in Table 2. The standards and lengths of proposed roads and trails are shown in Table 3.

Table 2
Picnicking and Camping Development Levels

Sites	Picnicking				Camping			
	Low 1/	Moderate 2/	High 3/	Number Units Planned (Master Plan)	Primitive 4/	Standard 5/	High Density 6/	Number Units Planned (Master Plan)
Rams-Head			X	100			X	100
Pine Creek Ranch			X	200				
Ash Spring		X		70				
Red Springs			X	200				
Willow Spring (Rocky Gap)							X	110
White Rock Spring	X			10				
Sandstone Quarry			X	190				
Lost Creek		X		50				
Ice Box Canyon						X		60
La Madre Canyon							X	230
Oak Creek							X	200

1/ 8 units/acre
2/ 10 units/acre
3/ 12 units/acre

4/ 3 units/acre
5/ 4 units/acre
6/ 4-8 units/acre

Table 3
Roads and Trails

Roads and Trails	Standards	Approximate Length
Red Rock Scenic Drive Segment B	24' paved surface	5.4 miles
Crestline Scenic Drive	24' paved surface	17 miles
Rams-Head Drive	24' paved surface	3 miles
Brownstone Loop Road	14' graveled surface	3.5 miles
Skyline Trail	4' width (no surfacing)	Approximate
Foxtail Trail	4' width (no surfacing)	Total
Front Trail	4' width (no surfacing)	Length of
Calico Hills Trail	4' width (no surfacing)	45 Miles

The following is a proposed sequence of development. The exact timing for development would depend on the availability of funds and manpower. Completion of construction is planned within 10 years.

Phase I

Red Rock Scenic Drive Segment B
Visitor Center (Phase I)
Willow Spring (Rocky Gap) Recreation Facilities
Sandstone Quarry Picnic Area and Trail Head
White Rock Spring Picnic Area and Overlook
Sanitary Landfill

Phase II

Visitor Center (Phase II)
Blue Diamond Administrative Center
Pine Creek Ranch Recreation Facilities
Red Springs Picnic Area and Playground
Ash Spring Picnic Area and Trail Head
Front Trail
Calico Hills Trail

Phase III

Crestline Scenic Drive
Rams-Head Drive
Rams-Head Recreation Facilities
La Madre Canyon Recreation Facilities
Mountain Springs Administrative Site
Skyline Trail
Foxtail Trail

Phase IV

Lost Creek Picnic Area
Ice Box Canyon Campground
Oak Creek Recreation Facilities
Spring Mountain Ranch Recreation Facilities
Brownstone Loop Road
Contact Station

C. Management Units Under the Proposed Action

Under the proposed action, the Red Rock Canyon Recreation Lands can be characterized in terms of six recreational land use categories which roughly parallel the recreational land use classes system employed by the Bureau of Outdoor Recreation. The six categories are: I - Commercial/Administrative; II - Recreation Development Area; III - Open Space, Corridor Area; IV - Natural Area; V - Wild Area; and VI - Cultural Area. The following sections will discuss these classes as planned for the Red Rocks (see map 4, page I-9 for the locations of these land classes). The classes are discussed in decreasing order of acreages devoted to each class.

1. Wild Areas (Approximately 33,620 acres)

These areas would be dedicated to preserving the existing environment. Improvements would be restricted to: trail development, primitive camp and picnic sites, rustic interpretive and directional signs, rustic facilities for visitor and resource protection and safety. Motorized vehicles and facilities or shelters for visitor convenience or pleasure would not be allowed in these areas.

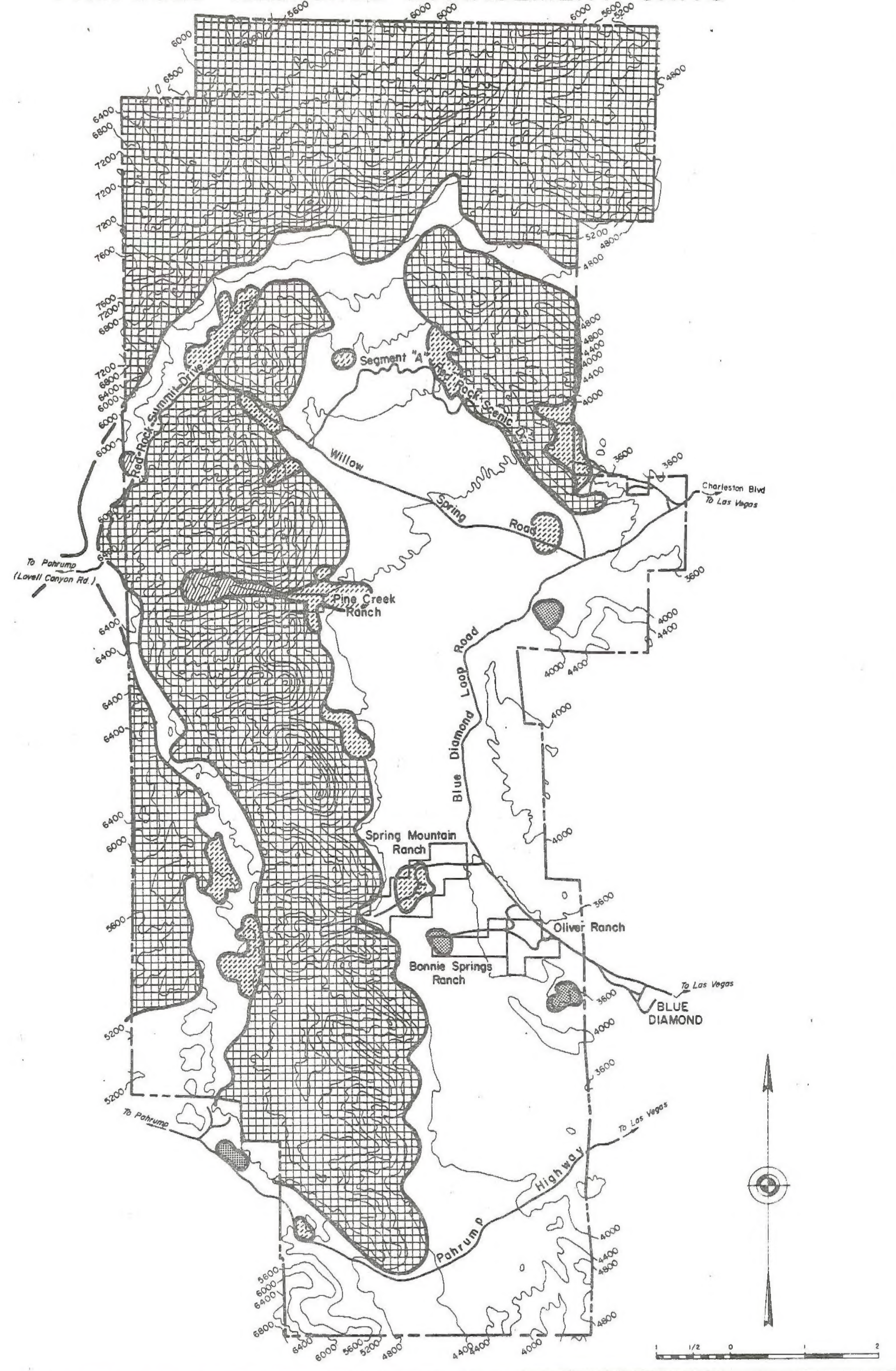
Other activities such as watershed protective measures and wildlife developments would be permitted as long as wild characteristics of the area are preserved.

2. Open Space - Corridor Areas (Approximately 28,800 acres)

The primary function of this area would be to provide the special facilities from which the scenic attractions could be viewed. Vehicular traffic would be permitted on designated roads and trails. Roads would be located to offer the best views and yet be unobtrusive.

Improvements, with the exception of roads and trails, would generally be on the perimeter and concealed so they would not mar the view. The color, texture and height of all structures within this area would be designed and constructed to harmonize and blend in with the immediate environment. Other activities such as watershed protective measures and wildlife developments would be permitted if within the constraints established in the master plan.

PROPOSED RESOURCE MANAGEMENT UNITS



☐ Open Space

▨ Natural Area

▨ Development Area

▦ Wild Area

▩ Commercial / Administrative

MAP 4

3. Recreation Development Areas (Approximately 1,160 acres)

Intensive recreation activities would be allowed in these areas. Improvements include campgrounds, picnic areas, overlooks, interpretive facilities and other compatible recreation facilities. Proposed camping and picnic sites and the probable number of units involved are shown in Table 2, page I-6.

4. Natural Areas (Approximately 500 acres)

These are areas where special management programs would be developed to preserve, protect and study natural resources and/or processes. Two such areas have been identified in the Red Rocks.

Pine Creek Natural Area (approximately 440 acres) -- Part of the North Fork of Pine Creek (240 acres) has been designated a research natural area. This area is set aside exclusively for scientific study and protection of the ecological community. All recreation use will be excluded from the area. Access for scientific study will be controlled by issuing special land use permits.

The remainder of the Pine Creek Natural Area will be open to the public for botanical sightseeing.

Lone Pine Natural Area (approximately 60 acres) -- The Lone Pine area contains an intermingling of the four major plant communities in the Red Rocks area. This area would be preserved for public viewing and study. Specific programs will be developed to protect, preserve and interpret this ecological community.

5. Commercial/Administrative (Approximately 120 acres)

a. Commercial Public Service Areas -- These areas if acquired would be set aside for development to provide special services and facilities consistent with the goals of the master plan. There are two such areas shown in the master plan.

The master plan identified the Spring Mountain Ranch as a possible lodge area. Possible uses include a working ranch, stables, general store and supplies, recreation facilities and tour services. This property has been acquired by the Nevada State Park System.

The Bonnie Spring Ranch is identified as a possible dude ranch. This ranch has been developed as a tourist attraction by the owners and features "Old Nevada" (replica of a 1890 townsite), minature railroad, restaurant, riding stable and live animal display.

b. Administrative Areas -- Three areas are identified for administrative uses.

The Blue Diamond Administrative Site would accommodate permanent housing for the chief ranger and his staff. Also included would be office, maintenance and storage facilities.

The Mountain Spring Administrative Area is primarily designed to accommodate fee collection and dissemination of visitor information. There would also be a small area for living quarters, maintenance storage and rescue equipment.

A sanitary landfill would be constructed for the disposal of solid waste.

6. Cultural Areas

There are numerous archeological and historical sites and trails in the area, but the total acreage is unknown at this time. These are discussed under the section on Archeology and History, page II-44 to II-56, and are shown on the Historical and Archeological map No. 10.

The management and development objectives for the cultural areas will be to preserve, restore and protect the features from deterioration and to interpret their significance to the public. In no case will development be initiated before survey by a qualified archeologist or historian.

D. History

The Red Rock area was part of the public domain lands until 1936. On May 20, 1936, the Desert Game Range was established by Executive Order 7373. It was enlarged by Public Land Order 156 on August 4, 1943. These two orders established a game range that included not only the present Desert Game Range but also the Spring Mountains and the Red Rocks. The size of the Desert Game Range was reduced to its present limits by Public Land Order 4079 of October 1, 1966. This order removed the Spring Mountains and the Red Rocks from the Game Range.

A development plan and feasibility study were prepared in 1966. These plans were superseded in 1968 by the master plan for Red Rock Canyon Recreation Lands.

Classification - June 27, 1967 -- The Spring Mountain Planning Unit was classified for multiple use management under the Classification and Multiple Use Act of 1964 (P.L. 88-607) on June 27, 1967. The Red Rock Canyon area is entirely within this classification.

On October 5, 1967, 61,881.27 acres were designated "Red Rock Canyon Recreation Lands" under authority of Code of Federal Regulations Subpart 1727, by Nolan F. Keil, State Director, Nevada. "The 'Recreation Lands' designation is used to assist the public in becoming aware of medium to large tracts of land where recreation is or is expected to be a major use."

Assistant Secretary Harry Anderson, representing Secretary of Interior, Stewart L. Udall, dedicated the area on October 29, 1967 as the "Red Rock Canyon Recreation Lands."

E. The State of Nevada's Role

The State of Nevada has looked upon the Red Rock Canyon as one of the State's most significant outdoor recreation areas. The Nevada Park System purchased Pine Creek and Spring Mountain Ranch in 1974 which are within the Red Rock Canyon Recreation Lands.

They have indicated that they would like to acquire the Red Rocks for a State Park. At the present time they are involved in the administration, management and development of the area in cooperation with the BLM.

Management of the Red Rock Canyon Recreation Lands was pursued with the Nevada Park System and an agreement signed on June 30, 1969 to cooperatively manage and develop the area. This agreement divided the recreation management of the Red Rock Canyon Recreation Lands into two parts in which each agency would have specific recreation management responsibilities. This agreement is still in effect. (See Appendix II.)

During 1973 both the Park System and BLM agreed on the need for a supplemental agreement to allow for administration and development. An Interim Supplemental Agreement was approved on October 23, 1973. (See Appendix II.)

F. Public Involvement and Legislative Action

In June 1964, a committee was formed by local and regional parties interested in the future of the Red Rocks. Represented were BLM, Bureau of Sport Fisheries and Wildlife, State of Nevada, Clark County and the State Advisory Board.

The committee worked closely with the League of Women Voters of Las Vegas Valley, the Sierra Club and the Clark County Traffic Control Director in gathering data. As part of this effort, a questionnaire was developed to determine:

1. Is the Las Vegas area population outdoor recreation-oriented?

2. Are the people aware of the recreation potential of Red Rock Canyon-Spring Mountains area?

3. What types of recreation development would they use? (See Consultation and Coordination with Others section, page IX-2 for questionnaire and background.)

The League distributed 6,500 questionnaires to the public through direct contact at community events, through the schools and to community groups. Of this number, 3,500 were returned.

Almost 90 per cent of the respondents indicated a concern and a feeling of need for more adequate outdoor recreation facilities in the Las Vegas area.

More specifically, 83.7 per cent said they would use picnic sites, 50.6 per cent indicated interest in a museum or exhibits, 48.6 per cent would use hiking trails, 47.9 per cent indicated an interest in overnight facilities.

Based on this data and further public contact through meetings, a BLM/State of Nevada design team developed a master plan for the Red Rock Canyon area in 1968.

Following 1968 survey and design of the facilities identified in the master plan proceeded. Where funding was obtained, a contract for construction of Segment A of the Red Rock Scenic Drive was issued in 1971.

In June of 1972 the Nevada Open Spaces Council demanded an environmental impact statement be done on the Red Rocks Master Plan. Further development of any kind is pending completion and approval of this statement.

Recent proposed legislation that could affect the Red Rocks includes:

Assembly Joint Resolution 9 passed by the Nevada State Legislature in 1973 recommended the Nevada State Park System acquire the area commonly known as the Red Rock Canyon Recreation Lands.

United States Senate Bills 1638 and 2013 introduced by Senator Alan R. Bible in 1973 would provide for transfer of the Red Rock Canyon Recreation Lands to the State of Nevada by amending the Recreation and Public Purposes Act.

United States House of Representatives Bill 9910 introduced by Congressman David Towell recommends transferring the Red Rock Canyon Recreation Lands to the State of Nevada.

None of these bills were ever voted upon.

G. Relationship with Other Projects and Proposals

There are three other major recreation developments in Clark County. The most extensively developed and used is the Lake Mead National Recreation Area, operated by the National Park Service. Second in order of popularity is Mt. Charleston area (Toiyabe National Forest), operated by the U. S. Forest Service. The third major area is the Valley of Fire State Park, operated by the Nevada State Park System.

There is some overlap of recreation opportunities already available and those proposed at Red Rocks. Each area has an unusual and definite role in the overall recreation complex. Water activities, available at no other area under consideration, are the unique contributions of Lake Mead. Valley of Fire provides an unusual opportunity for viewing very colorful and delicately eroded sandstone formations. Mt. Charleston is an area of unexpected summertime coolness in a harsh desert environment and is sought out by tourist and resident alike. It also provides the only winter sports facilities in the region.

The Red Rock Canyon Recreation Lands offer the visitor a different experience with both a desert environment and a high elevation area near the city limits of Las Vegas.

There are also several primitive and wilderness area proposals in the Las Vegas vicinity relating to developments proposed at the Red Rocks. The breakdown by agency and area is shown in Table 4.

Table 4
Primitive, Wilderness and Natural Area Proposals in Las Vegas Vicinity

Area	Acreage	Status
	Bureau of Land Management	
South Pahroc Range	30,000	Proposed primitive area
	National Park Service	
Lake Mead Nat'l. Rec. Area	480,000	Proposed wilderness designation
Lake Mead Nat'l. Rec. Area	1,766,000	Proposed roadless designation
	U. S. Fish and Wildlife Service	
Desert Nat'l. Wildlife Range	1,443,000	Proposed wilderness designation
	U. S. Forest Service	
Mt. Charleston	35,000	Designated roadless area

Private lands being developed for recreational purposes affecting the Red Rocks are:

The Calico Basin area bordering the recreation lands on the east and the Bonnie Springs Ranch, within the Red Rocks. The Bonnie Springs Ranch has been developed as a tourist attraction featuring "Old Nevada" (replica townsite), a miniature railroad, restaurant and dude ranch.

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

The following is a description of the environment as it exists at the time of this writing. This section does not analyze the effects or impacts on the environment of any of the options considered. Such effects will be discussed in later sections of this statement.

Also included in this section are discussions of planned actions which, though not part of the proposed action or the alternatives nor in existence at the present time, will when completed have significant impacts upon the existing environment, the proposed action, and the alternatives. These impacts may require modification of portions of the proposed actions and alternates as well as mitigating measures to protect the environment.

A. Non-Living Components

1. Location and Background Data

The Red Rock Canyon Recreation Lands are located in Clark County, Nevada on the east side of the Spring Mountains and are about 15 miles west of Las Vegas. The lands comprise approximately 64,000 acres, the majority under Federal jurisdiction. Private and State-owned lands occur within and adjacent to the recreation area.

Access is provided by paved roads. Charleston Boulevard enters the northern portion of the Red Rocks. The highway to Pahrump passes to the south of the Red Rocks and provides access to the southern section of the Red Rocks via the Blue Diamond Road. Within the recreation area the Blue Diamond Road connects with Charleston Boulevard to form a through road known as the Blue Diamond Loop Road.

A number of gravel and paved roads maintained by the BLM also traverse the area, giving access to numerous sites within the recreation areas.

2. Climate

The climatic conditions in the Red Rock area are characterized by low annual rainfall, high summer temperatures and mild winters. Arid to semi-arid conditions prevail.

Mean annual rainfall within the Red Rocks area varies from approximately 6 inches at the 4,000 foot elevation to a maximum of 12 inches at elevations above 7,000 feet. This area is located in the rain shadow of the Sierra Nevada Mountains. Frontal systems from the Pacific Ocean show a marked decrease in moisture on the lee side of the mountains. The descending air becomes drier and warmer, resulting in decreased precipitation. Rainfall from this source contributes over 50 per cent of the mean annual rainfall.

During the summer, moist air from the Gulf of Mexico moves northward. This is the moisture source for high intensity, short duration thunder storms experienced in July through September. The continental land mass furnishes moisture for precipitation usually occurring in November and February.

Most of the mean annual rainfall may be received from one or two storms. Summer thunderstorms can have intensities of 2 to 4 inches per hour; however, these storms seldom maintain these intensities for more than one hour.

Based on long term records, anticipated 6 and 24 hour rainfall amounts for selected reoccurrence intervals follow:

	Reoccurrence Intervals			
	2 Yr.	25 Yr.	50 Yr.	100 Yr.
6-hour rainfall amounts	1.1"	2.0"	2.2"	2.4"
24-hour rainfall amounts	1.4"	2.6"	3.0"	3.4"

During the summer, temperatures in the southern Nevada area can be expected to reach daytime levels of 100°F. and above, with relatively cool summer nights. Winters are usually mild and pleasant, with daytime temperatures near 60°F., and generally clear skies and warm sunshine. Relative humidity ranges from 10 to 35 per cent. Daily temperature ranges of 30-35°F. are common.

Las Vegas Valley has a recorded average annual temperature of 65.7°F., with a maximum of 117°F. and a minimum of 8°F. Short term records from the Red Rocks reflect lower temperatures below the Red Rock escarpment. These records indicate 62°F. as an average annual temperature, with highs of 110°F., and lows of 5°F. Because of the 3,000 foot difference in elevation between the base and the top of the escarpment, a corresponding temperature differential can be expected. The average annual temperature at the top of the escarpment is near 55°F., with highs of 98°F. and lows of about 0°F.

Winds associated with major storms are strongest during late winter to early summer and accompany the Pacific frontal and continental cyclone systems. Pacific frontal systems generate prevailing southerly winds during March through September with average speeds of 4 to 6 miles per hour, and northerly winds the rest of the year with average speeds of 13 to 16 miles per hour. These distinct flow patterns are caused respectively by the presence of a deep thermal low pressure trough over the interior during the summer months and frequent outbreaks of cold polar air masses over the Great Basin of Nevada and Utah during the winter months. Continental cyclone systems produce no distinct prevailing wind direction patterns. Gentle afternoon breezes can be expected about 30 per cent of the time in the Red Rocks, but are stronger in the canyons than the valley floor. Wind gusts in excess of 50 miles per hour may accompany summer thunderstorms.

Evaporation rates in the Red Rock area are high due to high temperatures, low humidity and generally continuous air movement. Evaporation data indicates a yearly normal evaporation rate of 82 inches from a free water surface.

3. Air & Air Quality

Air quality in the Red Rock area is presumed to be good. No measurements of pollutant levels have been made in the area, but it is visually obvious that the air is clearer and cleaner than it is in the Las Vegas Valley where air pollution is a definite problem. The Red Rock area appears to be largely unaffected to pollutants in the valley. However, when the winds are easterly or southeasterly these pollutants may reach the Red Rocks.

The major sources of air pollution in the Red Rock area are wind-blown dust, automobile emissions transported by winds from Las Vegas and gypsum plant particulate matter. Wind-blown dust is the most noticeable. The main sources of the dust are unpaved roads and trails and some unauthorized off-road vehicle use. Automobile emissions are most noticeable around the picnic areas during the summer and on weekends.

The Flintkote gypsum plant is located to the southeast of the Red Rock area. It produces 1,800 pounds of gypsum dust per hour. This dust does not normally affect the Red Rocks. However, when the winds are from the southeast or east, (most prevalent during the March-Sept. period) some dust may be blown into the Red Rocks.

The emission rates for uncontrolled automobile exhaust can be summarized as follows (Public Health Service, 1969):

TABLE 5
Exhaust Emission Rates

Type of Emission	Lbs./1000 Vehicles-Miles	Lbs./1000 Gal. of Gasoline	Lbs./Vehicle Day
Aldehydes	0.3	4	0.007
Carbon Monoxide	165.0	2300	4.160
Hydrocarbons	12.5	200	0.363
Oxides of Nitrogen	8.5	113	0.202
Oxides of Sulfur	0.6	9	0.016
Organic Acids	0.3	4	0.007
Particulates	0.8	12	0.022

In 1973, an average of 1,165 vehicles used roads (2 way travel) in the Red Rocks each day. Of these 225 used the Red Rock Scenic Drive, 460 used the Blue Diamond Loop Road and 480 used the Mountain Springs Summit Road.

Using these figures and the preceding table, the average amounts of air pollutants attributable to each vehicle per day can be calculated.

TABLE 6
Calculated Emission Rates

Type of Emission	Lbs./Vehicle Day	Total Amount (Lbs./Day x 1,070 vehicles)
Aldehydes	0.007	8.16
Carbon Monoxide	4.160	4846.40
Hydrocarbons	0.363	422.90
Oxides of Nitrogen	0.202	235.33
Oxides of Sulfur	0.016	18.64
Organic Acids	0.007	8.16
Particulates	0.022	25.63

The air quality standards for the State of Nevada adopted by the Commission of Environmental Protection and approved by the Environmental Protection Agency are in Table 7.

TABLE 7
Air Quality Standards

The following air contaminant concentrations shall not be exceeded at any single point in the surrounding air (in micrograms per cubic meter and parts per million):

Sulfur oxides as sulfur dioxide
Annual arithmetic mean .... 60 ug/M^3 (.02 ppm)
Maximum 24 hour concentration ... 260 ug/M^3 (0.1 ppm)
Maximum 3 hour concentration .... 1,300 ug/M^3 (0.5 ppm)

Particulate matter
Annual geometric mean .... 60 ug/M^3
Maximum 24 hour concentration ... 150 ug/M^3

Carbon monoxide
Maximum 8 hour concentration .... 10,000 ug/M^3 (9.0 ppm)
Maximum 1 hour concentration .... 40,000 ug/M^3 (35.0 ppm)

Photochemical oxidant
Maximum 1 hour concentration .... 160 ug/M^3 (.08 ppm)

Hydrocarbons (non-methane fraction)
Maximum 3 hour concentration between
6 a.m. and 9 a.m. .... 160 ug/M^3 (0.24 ppm)

Nitrogen dioxide
Annual arithmetic mean .... 160 ug/M^3 (.05 ppm)

The Clark County Standards are as follows:

1. Smoke:

   a. No more than 10 per cent light diminishment regardless of color.

   b. Motor vehicles shall not emit smoke while moving for a distance of more than 100 yards.

2. Fugitive Dust:

   Must not create a hazard and must not cross property lines.

3. Particulate Matter:

   0.00407 lbs./hr. per 10 lbs. of refuse burned.

   0.046 lbs./hr. per 10 lbs. of material processed by an industry.

4. Sulfur Dioxide:

   150 lbs. per billion BTU/hr. Applicable to power generating plants.

Air movement, wind direction and intensities are discussed under the section on climate. The "Dames and More, Joint Meteorological Report" prepared for five Southwestern power generating stations, dated September 1, 1971, indicates that the Red Rock area is on the western border of a very large air shed including southern Nevada, southwest Utah and northwest Arizona.

The extent of the air shed depends on meteorological parameters such as wind speed and direction, turbulence, temperature, topography and general movement of air masses.

The following tables (Tables 8 and 9) from the Clark County District Health Department indicate the thickness and occurrence of air inversions in the Las Vegas air shed adjacent to the Red Rock area.

Testimony of R. J. Fiorto, the assistant director of the Air Pollution Control Division of the Clark County Nevada Health Department, indicates the following for the Las Vegas Valley:

1. Topographic features aggravate atmospheric pollution problems. Atmospheric inversion conditions exist for about 3600 hours per year. These occur most frequently between November and January.
2. Indications are that 50 per cent of the surface inversions occur at mixing heights of 700 feet or lower from ground level. This means that at least 50 per cent of the time during the

TABLE 8
SURFACE INVERSION OCCURRENCE
October 1964 - September 1966, Incl.
Las Vegas, Nevada

By Month		By Height	
Month	Occurrence Per Cent Days	Inversion Thickness, Ft.	Occurrence Per Cent Days
January	87	200	0.3
February	80	300	21.2
March	85	400	7.5
April	79	500	4.5
May	74	600	5.4
June	90	700	6.5
July	85	800	7.4
August	88	900	5.3
September	86	1000	4.6
October	92	1100	5.2
November	86	1200	3.9
December	83	1300	1.5
All Months	84	1400	2.8
		1500	1.0
		1600	1.7
		1700	1.5
		1800	1.0
		1900	0.7
		2000	0.1
		over 2000	
		1500 & less	

NOTE: Computed from meteorological soundings furnished by U.S. Weather Bureau Station, McCarran Airport, Las Vegas, Nevada

TABLE 9
LOW-LEVEL (BELOW 500 FT.) INVERSION CLOUD COVER AND SURFACE WIND OCCURRENCE, LAS VEGAS, NEV.

(Extracted from Monthly Weather Review,
Vol. 89, September 1961, pp. 319-339.)

1. Per cent of total hours of inversion (2-year period--1957-59)

Winter	54
Spring	39
Summer	37
Fall	50
Annual	45

2. Per cent frequency of days with nocturnal inversions (2-year period, 1957-59)

Winter	92
Spring	86
Summer	89
Fall	90
Annual	89

3. Per cent of night-time hours with cloud cover 3/10 or less (5 year period)

Winter	60+
Spring	70
Summer	80+
Fall	80+
Annual	70+

4. Per cent of night-time hours with wind speed 7 MPH or less (5 year period)

Winter	80+
Spring	80+
Summer	90
Fall	90
Annual	80+

5. Per cent of night-time hours with cloud cover 3/10 or less and wind speed 7 MPH or less (5-year period)

Winter	70
Spring	70
Summer	70+
Fall	80+
Annual	70+

This information indicates the most critical month for air inversions is February.

year, the surface inversion height is 700 feet or less.

3. The inversion level with respect to the ground determines the total volume of air that is available for mixing with the pollutants being generated at the surface. As the volume of air for mixing decreases, the concentration of pollutants in the surrounding air will increase.

4. Generally, in the absence of daylight cloud cover, the surface inversion burns off as the valley floor heats up and the trapping layer of warm air is thus eliminated, ventilating pollutant concentrations to the upper atmosphere.

5. Air inversions occur almost 90 per cent of the time on an annual daily basis. Relatively stagnant wind conditions occur over a high percentage of the time. These conditions are normally offset by solar heating during the day which raises or dissipates the inversion. Wind speed normally increases at that time providing lateral dispersion of the pollutants.

   Emergency conditions from an air pollution standpoint can arise if the more highly dispersive conditions do not occur on a daily cycle and stagnant conditions persist for two to three days or longer. These figures and statements refer to the Las Vegas Valley. The Red Rock area lies at a higher elevation and does not suffer from the lower elevation air pollution of the Las Vegas Valley. However, it is adjacent to the valley and could contribute to the overall pollution problem.

4. Topography

The predominant feature of the Red Rock area is the escarpment which extends the entire length of the designated area. The escarpment rises 3,000 feet from the alluvial terraces and has an elevation of approximately 7,000 feet. In back of the escarpment the terrain, with a well developed drainage pattern, gradually slopes to the west. Several steep canyons within the escarpment contain unique topographic features such as massive boulders, rock chimneys, cliffs and ephemeral waterfalls.

East of the escarpment, at elevations of 3,600 to 4,000 feet are pediments and gently sloping alluvial terraces dissected by numerous arroyos. Two primary drainages dissect the low lying areas. They are known as Red Rock Wash and the Cottonwood Wash.

Blue Diamond Hill and the Calico Hills form the eastern boundary of the Red Rocks. These are composed of erosional remnants of multi-colored sandstone in many unusual shapes. The La Madre Mountains form the northern boundary of the Red Rocks area. The mountains' southern exposure is comprised of even, dissected slopes.

The steep cliffs and fractured nature of the rocks lend themselves to rockfalls and slumping. The many large boulders and rubble piles in the canyons and along the escarpment are evidence of past activity of this type. This activity occurs today and will continue to as long as loose, fractures, or easily eroded rock occurs in areas of steep slopes.

Man-made topographic changes in the area are largely the result of construction. A number of cuts and fills were required during the construction of the Segment A portion of the Red Rock Scenic Drive. The largest of these cuts is 24 feet deep and about 300 feet long. The largest fill associated with this road segment is 24 feet deep and about 250 feet long. In addition there are a number of smaller cuts and fills. Many of these scars are visible from points in the Red Rocks.

5. Geology

The formations exposed in the Red Rock area record more than 500 million years of earth history. The oldest rock formation found in the area contains fossils which indicate that it may have been formed more than 500 million years ago.

Fossil corals indicate the rocks were formed in a warm, shallow sea that once must have existed in the Las Vegas area. This sea persisted for almost 400 million years and a thick series of marine limestones was deposited.

Toward the end of the Paleozoic Era (200 million years ago) this sea began to retreat and the character of the rocks being deposited in the area changed. The marine limestones were replaced by red shales and sandstones that were deposited in a terrestrial environment. These red rocks are thought to represent the preserved remains of ancient sand dunes.

Such rocks were formed throughout most of the Mesozoic Era (Age of Dinosaurs) which lasted for about 100 million years. While few remains of the dinosaurs have been found in the rocks of this area, plants contemporary to them have been preserved. Petrified wood is the remains of buried plants whose wood was slowly replaced by minerals. Petrified wood is fairly common in these rocks.

The major geologic feature of the Red Rocks area is the escarpment. It was formed by large scale earth and rock movements. Large cracks called faults occurred in the rocks and great masses of material were pushed over and on top of other rocks. The major faults are shown on map (map #5, p. II-11). Limestones were thrust on top of the red sandstones. These resistant limestones have protected the softer red sandstones from erosion where they covered them, thus forming the escarpment. This escarpment is about 20 miles long and about 3,000 feet high. This period of earth history was also one of volcanic activity in southern Nevada. Volcanic ash occurs within some of the red sandstones in the Red Rocks and lavas occur in many places in southern Nevada.

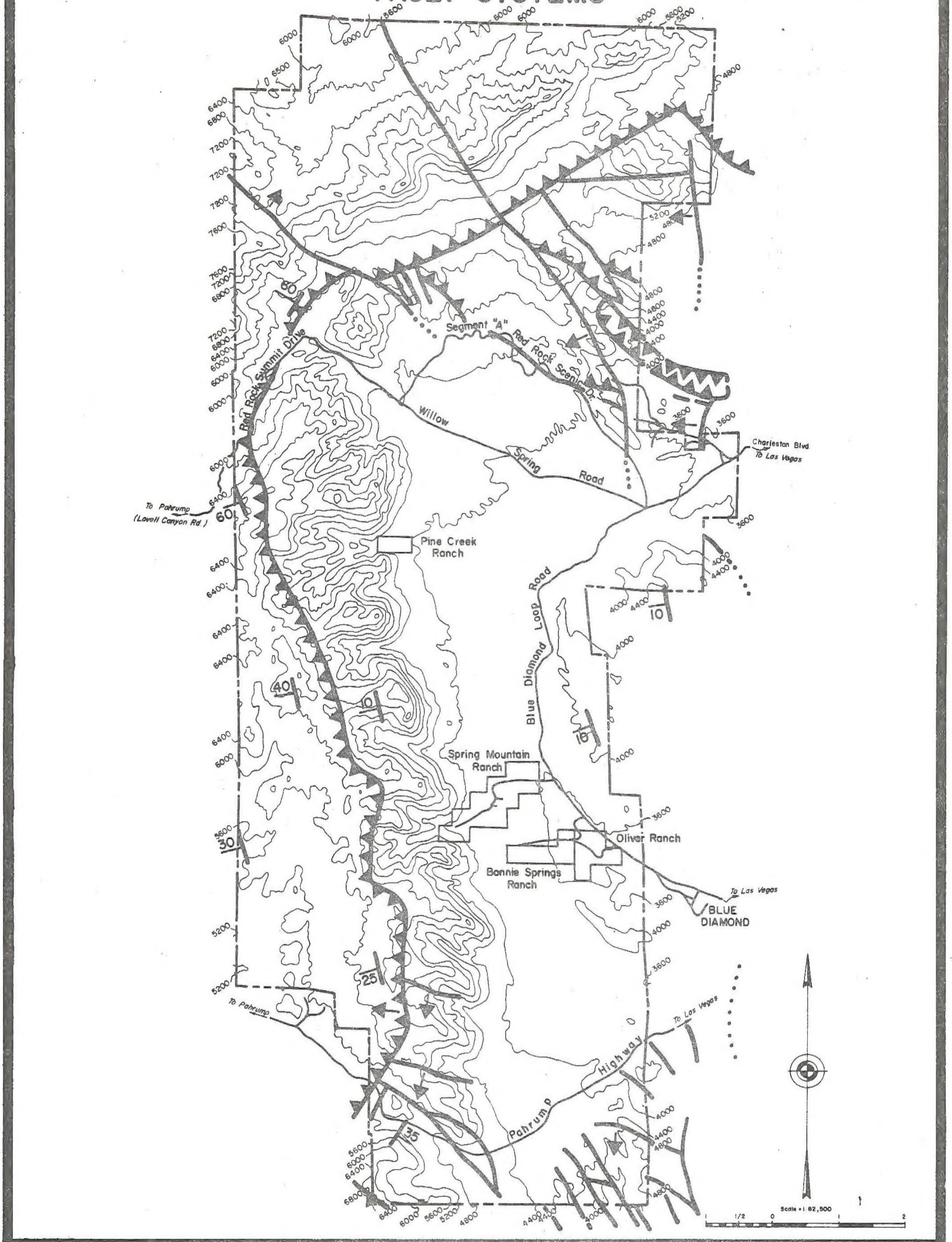
Since this time of earth-moving and volcanic activity, southern Nevada including the Red Rock area has been geologically quiet. There have been no major earthquakes recorded in the area according to Coffman and vanHake, 1972 (see References Section). The Nevada Bureau of Mines has been monitoring small shocks in Nevada for a number of years. Such shocks have been up to intensity 4.5 which would feel like a truck hitting a building. Most of these small shocks have occurred in Esmeralda County northwest of Las Vegas and the Red Rocks area.

Another source of earth-shocks are the tests at the Atomic Energy Commission's Test Site northwest of the Red Rocks. These shocks, regardless of their origin, may cause rock falls in areas having steep slopes and fractured rocks, including the Red Rocks area. People climbing on the rocks can also cause rock falls by dislodging loose boulders.

Aside from these rock falls, geologic activity has been largely restricted to the erosion of the rocks and the deposition of this eroded material on the alluvial fans that flank the base of the escarpment. This erosion has not only lead to the formation of the alluvial fans but also of a natural arch, rock chimneys, pot holes, and other interesting rock formations.

At least one cave has been formed in the limestones within the Red Rocks area. Called the Desert or Hidden Cave, it is located in the hills southeast of the proposed administrative site. It contains one large room, 284 feet long and up to 125 feet wide, but less than 9 feet high. This room has been broken into several smaller rooms by large rubble piles caused by collapse of the ceiling. This cave contains stalactities, helictites and stone draperies. The cave is mostly dry and no cave

FAULT SYSTEMS



MAP
5

animals have been reported.

Since this cave was reported to the BLM in 1970, it has been repeatedly vandalized. A steel grill gate was installed, torn off and reinstalled a number of times in 1970. In 1971 the entrance was sealed with concrete to protect whatever was left of the cave formations. Vandals have tunneled around this plug a number of times and the plug has been expanded to close these new entrances. People were seen carrying stalactites away from the area in the spring of 1974, and it appears that a new entrance has been dug to the cave.

6. Minerals

The Red Rock Canyon Recreation Lands were closed to mineral entry (location of mining claims) on June 27, 1967 by classification notice N-257. These lands were left open to the mineral leasing and mineral material sale laws. This closure to mineral entry was made subject to valid, existing mineral rights. To determine such rights, mineral examinations of the claims located in the Red Rocks prior to the closure must be made.

Mineral investigations are being conducted to determine the validity of these claims. The status of these claims is as follows:

a. Areas Cleared of Claims

Willow Springs
Sandstone Quarry
Calico Spring

b. Areas where Claims have been Investigated and Contest Recommended, but which have not gone to Contest as yet

Oak Creek (Hassett Group - 10 claims, and Rhea Group - 7 claims)

Other claims exist in the Oak Creek area, but have not been investigated (see below)

c. Areas where Claims Exist that have not been Investigated

Brownstone Reservoir	2 claims
La Madre Springs	6 claims
Ash Springs	2 claims
Red Springs	2 claims
Mescal Pits	3 claims
Pine Creek area	3 claims
Oak Creek	20 claims
First Creek	5 claims
Rainbow Springs	3 claims
Mud Springs	3 claims
Moonshine Springs	2 claims
Shovel Springs	9 claims

d. Areas where no Claims were Found

White Rock Springs
Blue Diamond Administrative Site
Lost Creek
Icebox Canyon
Lone Pine
Switchback Springs

Most of the claims located in the area are for building or decorative stone (Aztec Sandstone and Shinarump Conglomerate). Several locators also list uranium among the minerals located. Uranium does occur in the Shinarump Conglomerate in Arizona and Utah, but no production from the Shinarump in Nevada has been reported. Where claims have been investigated for uranium, the radioactivity measurements have not exceeded normal background levels. No other locatable minerals are known to occur within the Red Rocks.

In addition to these mining claims, there are a number of mill site claims (Margo Group) near the Red Rocks area. These claims were located by the Flintkote Company, operator of the Blue Diamond Gypsum Mine and Mill southeast of the Red Rocks. These claims were located in Section 24, T.21S., R.58E. (Mount Diablo Meridian) (map #2, page I-3). The Flintkote Company plans to construct a new grinding and fabrication mill on these claims within the next five to 10 years. This mill would be visible from the proposed Blue Diamond Administrative Center. They also plan to connect this mill via a short road spur to the Blue Diamond Loop Road which would be used to transport the mill products to market.

The Blue Diamond Gypsum Mine and Mill has been in operation since 1909. It includes an open-pit mine where the gypsum is mined and a mill and fabrication plant where the gypsum is processed into wall and lath board. The present production of this facility exceeds 300,000 tons per year. The known reserves of gypsum are large and renewed exploration is expected to reveal even more mineable material. The mine properties adjoin the Red Rocks (see map #2, page I-3). The mill is about 2 miles east of the Red Rocks (map #2, page I-3).

The only other mining activity that has occurred in the area is the exploration and development work on some of the existing mining claims and the quarry operation at Sandstone Quarry in the Red Rocks. Activity on the mining claims has largely been in the form of road building, site clearing, and explorational mining on the claims. A quarrying operation was once conducted at Sandstone Quarry. The quarried blocks have been stacked near the quarry and left. This rock is a common variety of sandstone sometimes used as a facing stone. This material was quarried for a claim found to be invalid upon investigation principally due to the unsuitability of the stone for such uses. Stones of this type were removed from location under the general mining laws of 1955. The claims in the Red Rocks predate 1955.

The Red Rock Canyon Recreation Lands remain open to oil and gas leasing and other forms of mineral leasing operations. The U.S. Geological Survey has classified these lands as potentially valuable for oil and gas but not for other leaseable minerals including geothermal resources. At the present time there are no leases in the area, but several exist within 15 miles of the area at Arden and Sloan.

The area is also open to the mineral sale laws covering minerals such as sand and gravel and stone products. Large deposits of sand and gravel exist within the Red Rocks. The alluvial fans that flank the escarpment are essentially composed of such materials. Stone products including common varieties of building stone also occur in the area evidenced by the numerous claims located for such materials and the operation at Sandstone Quarry. The red sandstones composing escarpment can also be considered common varieties of stone.

The only other mineral known to occur in the Red Rocks is petrified wood. This mineral may be sold under the mineral sale laws, or collected without charge if certain rules are followed. These rules state (43 CFR 3622) that no more than 25 pounds per person per day and not exceeding 250 pounds per year may be collected if this collection does not involve excavation or other damage and if the material is collected for personal use and not for sale.

7. Soils and Watershed

Soil has been defined as a earth material modified and acted upon by physical, chemical and biological agents so that it will support rooted plants (American Geological Institute, 1962). Physical agents that act to form soils include the climate of the area, amount of rainfall, rates of erosion and transportation, etc. Chemical agents include the composition of the parent materials, minerals dissolved in water, etc. Biological agents include burrowing animals and the plants which provide organic materials and biochemicals to the soil.

With so many factors involved soils are complex and vary greatly from place to place and even vary through time as climatic changes occur. Soils can, however, be considered to fall into two large classes, those that form in place on top of the parent rock with little or no transportation, and soils that are formed on materials eroded from one area and transported to another. Both types occur in the Red Rocks. The in-place soils occur most commonly on top of the escarpment while the transported soils occur below the escarpment. Parent materials for both types of soils are the limestones and sandstones that occur at the surface or below the soils, or mixtures of these two rock types.

Hard pan (caliche) occurs in many of these soil types. Hard pan is the result of the deposition of lime in the soil apparently caused by rainwater leaching the soil materials and redepositing the lime near the surface. This process can be repeated many times until an impermeable, totally cemented rock is formed.

Testing of the infiltration rates of these soils has only just begun and much additional data is needed. The preliminary results (Cooley et al, 1973) indicate the amount of water that will flow through these soils in a given time (infiltration rate) varies widely and is dependent upon the soil type and the amount of hard pan.

Because of the complexities of soil formation, it is difficult to describe them without becoming somewhat technical. Generally, the soils in the Red Rocks area are composed of sandy loams, with 35-60 per cent gravel and have a mean annual temperature of 15-22°C. at 2 feet below the surface. The depth to hard pan is from zero to more than 60 inches.

The Red Rock area is divided into six soil mapping units (see map 6a page II-16). Each mapping unit is assigned a number and represents percentages of the major soils types identified by the U.S. Soil Conservation Service.

a. Mapping Unit 415

Typic Paleorthids (40%); Typic Torriorthents (30%); Typic Calciorthids (25%).

This mapping unit occurs on the higher dissected alluvial fans below limestone hills in the survey area. It consists of undulating to steep gravelly ridges and side slopes with narrow drainageways. The main slopes are approximately 8 per cent with side slopes up to 30 per cent. The soils have a 30-60 per cent surface cover of gravels with some stones near the heads of some alluvial fans in larger drainageways. The soils are shallow to deep, calcareous, medium to coarse textures with more than 50 per cent gravel.

b. Mapping Unit 417

Typic Torriorthents (65%); Typic Haplargids (15%).

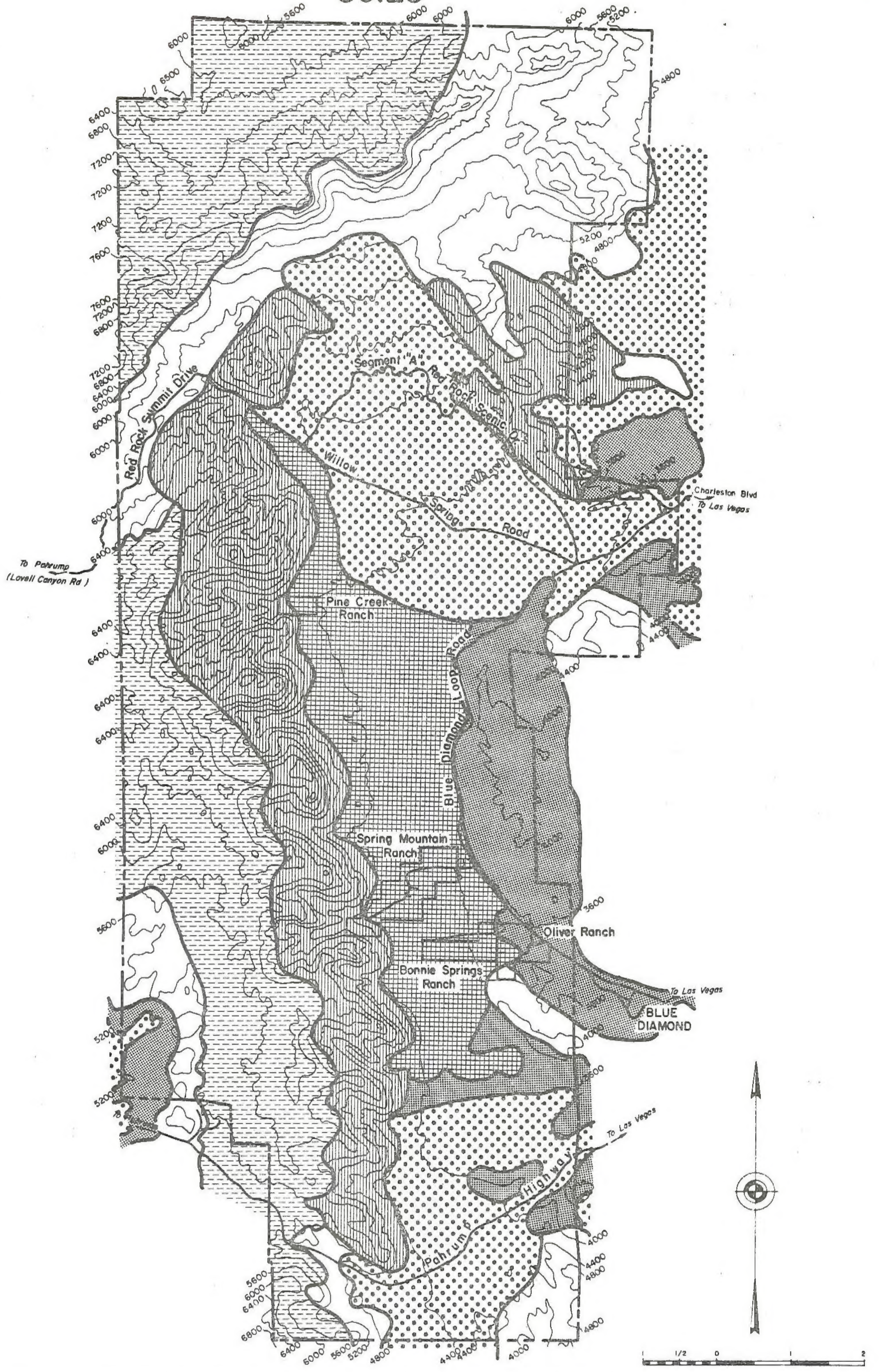
This mapping unit occurs on moderately to strongly sloping, short alluvial fans below the unit 914 in the Red Rock Recreation area. These fans are generally not more than one-half mile in length, with stabilized side slopes into the drainage system. The unit consists of deep, reddish-brown, very gravelly loamy calcareous soils. These soils are developing in alluvium from the red sandstone cliffs and and generally contain 40-80 per cent sandstone fragments that range in size from gravels to stones. The 6- to 10-inch surface layer is normally moderately coarse textures and nongravelly.

c. Mapping Unit 442

Ustollic Haplargids (35%); Lithic Ustollic-Calciorthids (35%); Limestone outcrop (20%).

This mapping unit occurs in the Spring and Sheep Mountains above

SOILS



☐ 912

▩ 913

▥ 914

⁘ 415

▦ 417

▤ 442

MAP 6a

5,000 feet. It consists of rolling to very steep mountain ridges, side slopes and narrow drainageways that are normally bedrock controlled. The soils are brown, shallow, moderately deep, calcareous, gravelly loams developed in limestone-derived material with some windblown additions.

d. Mapping Unit 912

Typic Torriorthents (40%); Typic Paleorthids (25%); Limestone outcrop (25%).

This mapping unit occurs on the dry desert mountains. It consists of a very steep to perpendicular fault block front that consists mainly of rock outcrop with a moderate dip on the back slope. Elevations from the base to the summit range from 200 to over 1,000 feet.

e. Mapping Unit 913

Typic Torriorthents (45%); Typic Calciorthids (25%); Limestone outcrop (15%).

This mapping unit occurs on the low, rolling, limestone-controlled hills. It has low (normally less than 250 feet) steep escarpments on one side and moderate to steep back slopes. Also included in the unit are low, rolling, limestone-controlled hills that may be isolated or associated with the dry desert mountains in the 912 unit. The surface varies from gravelly to very gravelly and cobbly with occasional stones. The soil is very gravelly and high in carbonates.

f. Mapping Unit 914

Sandstone outcrop (90%).

This mapping unit occurs as sandstone bluffs along the eastern front of the Spring Mountains. This miscellaneous soil type consists of very steep, barren, sandstone ridges ranging from 1,000 to 2,000 feet in elevation.

The Red Rock Canyon Recreation Lands are made up of two watersheds. One watershed drains eastward to the Las Vegas Valley via two ephemeral streams, Red Rock Wash and Cottonwood Wash, which transport the infrequent flood flows from the watershed. The other watershed drains southward to Pahrump Valley through Lovell Canyon. The two watersheds are separated by the Red Rock escarpment and are approximately equal in area.

The watershed from the escarpment east to the edge of the valley floor is protected from erosion by massive sandstone cliffs cut by steep narrow canyons with accumulations of sediments gathered over long periods of time. Some of the canyons have springs in them. These drainages make their way across the valley and eventually join one of the two major washes that drain the area. Much of the surface water flowing through these streams and washes is lost through rapid runoff (Cooley et al, 1973). The area is protected from erosion by bedrock, rock fragments, vegetation and litter. A comparatively small portion of the area is bare ground.

West of the escarpment the watershed lies on a west-facing slope protected by limestone bedrock, covered by coarse-grained shallow soils, rock fragments, vegetation and litter.

The erosion condition class, considering both watersheds as a whole, is considered moderate to slight, although there are critical erosion areas at specific locations within the watersheds that must be recognized.

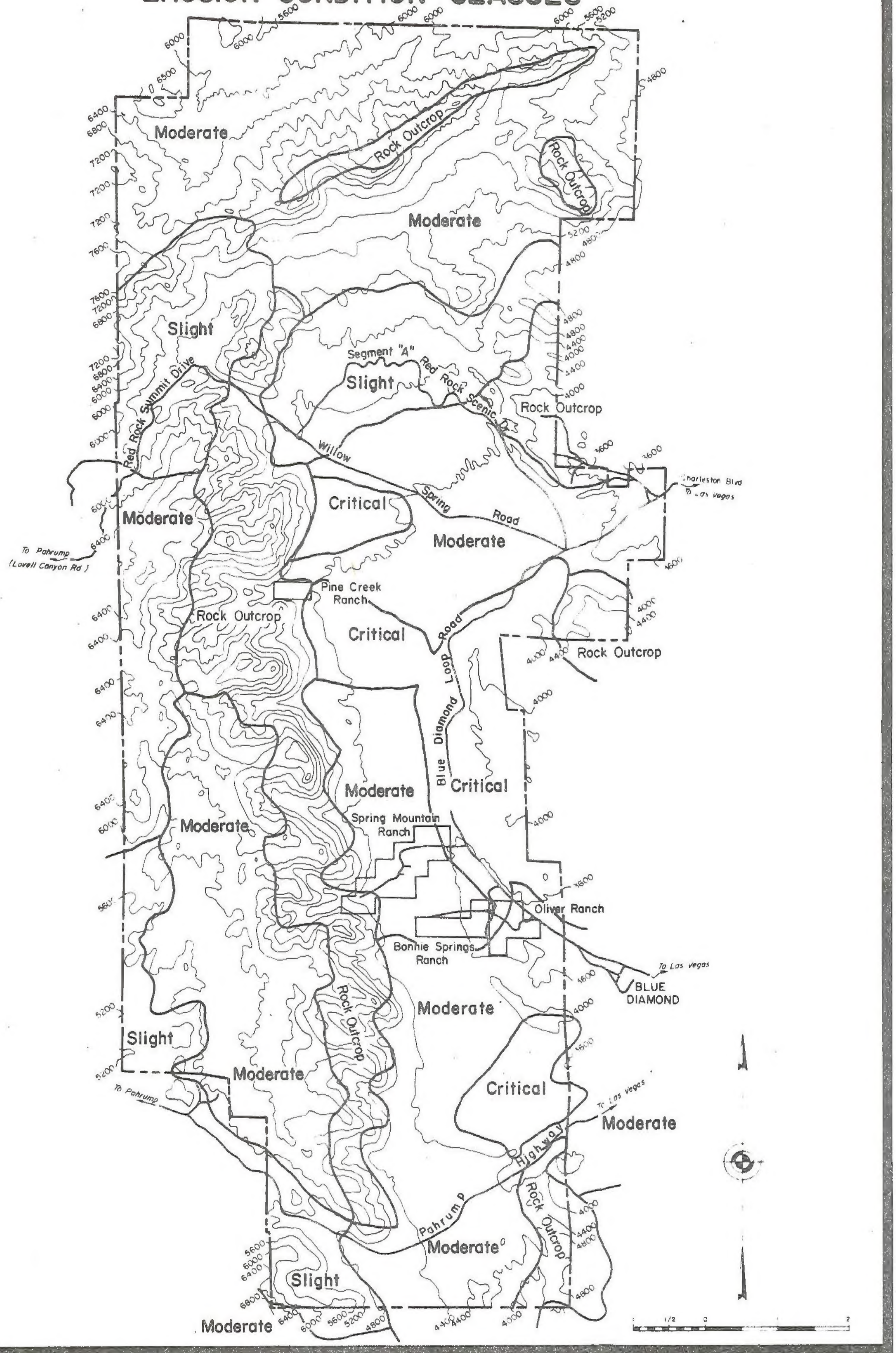
These erosion condition classes were determined by BLM through an on-the-ground analysis of various soil and vegetation characteristics (see map 6b, p.II-19). The criteria for these classes are:

a. Stable - there are no signs of soil movement. Surface litter is usually accumulating in place. Surface rock, if present, will be evenly distributed over the area. No rills are apparent. No flow patterns are apparent. Gullies may be present in a stable condition. No rocks or plants on pedestals are apparent.

b. Slight - some movement of soil particles is apparent. Some surface litter movement is apparent. Surface rock may be present but collection of small particles may be spotty. No pedestals are apparent. Rills less than 1/2 inch deep occur at infrequent intervals of more than 10 feet. Visible flow patterns have been formed by surface water. Deposition of pavement particles may appear in flow patterns. Gullies may be present, but with little evidence of streambank or streambed erosion.

c. Moderate - moderate movement of soil is plainly visible and recent. Moderate movement can be recognized by slight terracing caused by the accumulation of material deposited against litter, vegetation or rocks. The terraces will generally be less than 1 inch in height. Moderate movement of litter is apparent. Some surface rock may be exposed in bare spots where fine soil particles have been recently removed by wind and/or water. Small rocks and plants on pedestals occurring in the flow patterns may be noticed. Small rills are apparent in exposed places. These rills will be between 1/2 and 6 inches deep at intervals of approximately 10 feet. Sediment deposits are visible intermittently in flow patterns and against small obstructions elsewhere.

EROSION CONDITION CLASSES



These erosion condition classes are defined in the text on page

MAP 6b

d. Critical - the soil mantle is in a critically eroded condition. Soil movement occurs with each runoff. Transported soil and debris caused by wind and water is deposited throughout the area against minor surface obstructions. Extreme movement of litter is apparent. Recent surface rock is well formed on gravelly and stony soils. Small rocks and plants on pedestals are generally evident and roots are exposed. Large rills are apparent on exposed areas. Flow patterns contain easily noticeable silt and sand deposits and alluvial fans. Actively eroding gullies are present on 10 to 50 per cent of the area being considered.

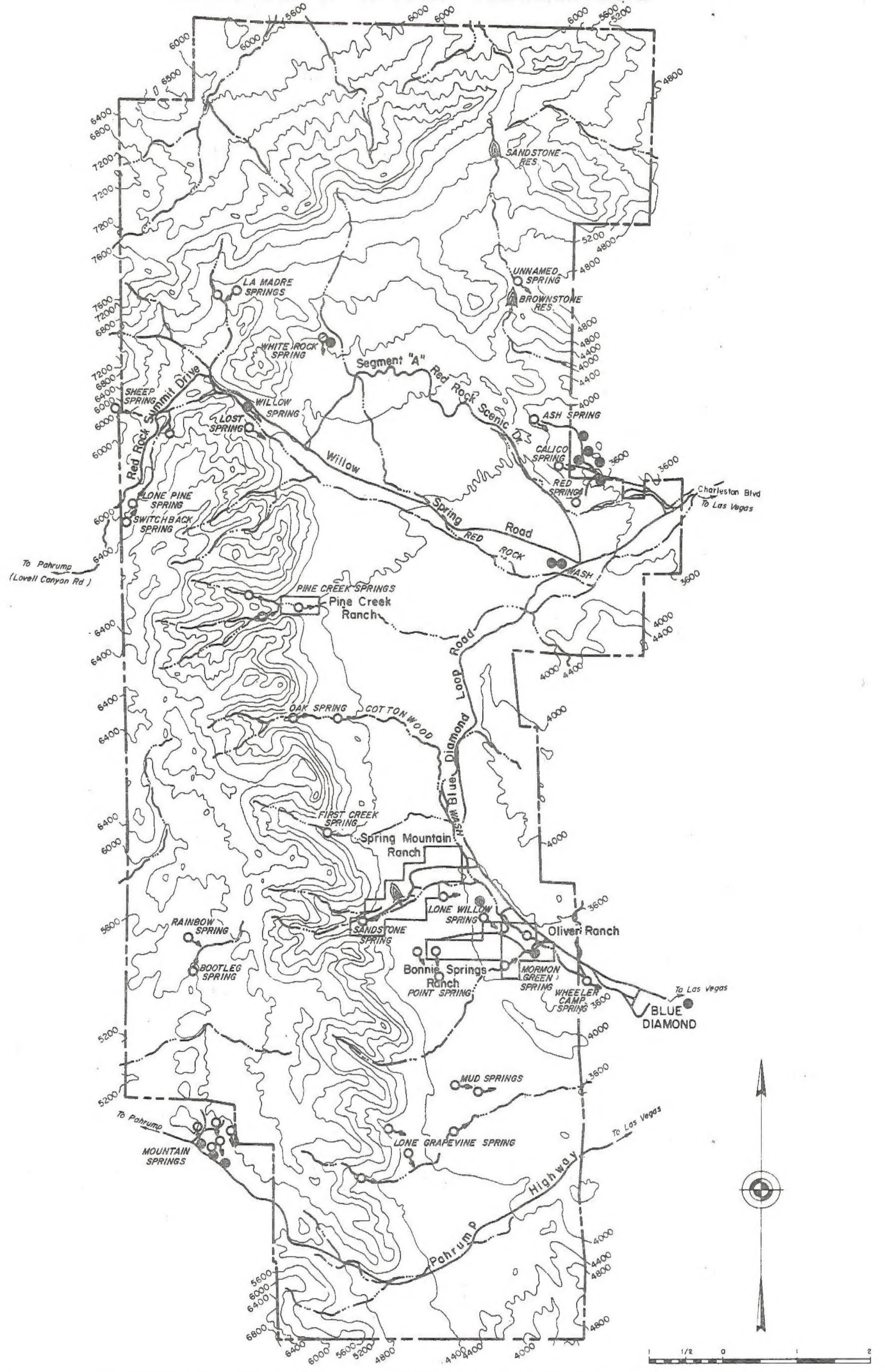
8. Water

Water is a precious commodity in the Las Vegas Valley area. Rainfall averages only 4 inches each year in the valley. Rain and snowfall in the Spring Mountains, supplies most of the recharge for the Las Vegas Valley aquifer. This aquifer provides a portion of the metropolitan area's water supplies. These supplies are augmented by water from Lake Mead. While it would appear that sufficient water is available from these sources, the opposite is actually the case. According to the Commission on Population Growth and the American Future (1972) the Las Vegas area has been a water deficit area since 1960.

There are three sources of water in the Red Rock Canyon Recreation Lands: surface water from spring discharge, overland flow from precipitation, and groundwater.

Surface water occurs in the form of 41 springs within the area (see map 7, p.II-21). The following table shows the springs on which flow data is available:

DRAINAGE & WATER RESOURCES



○→ SPRING

● WELL

RESERVOIR

MAP 7

TABLE 10
Spring Flow

Spring	1965	1968	1971
	(flow in gallons per minute)		
First Creek	15	-	120 (estimated)
Calico Spring	2	-	-
Ice Box Canyon	2	-	10
LaMadre	-	4	-
Lone Pine	-	-	3.3
Lost Creek	10	-	40
Oak Creek	12	-	240 (estimated)
Pine Creek	50	-	240 (estimated)
Red Spring	3	-	12
Switchback Spring	dry	-	-
White Rock Spring	1.5	-	0.39
Willow Spring	4	-	3
Ash Creek	10	-	5.85
Little Creek	0.5	-	-
Mud Springs	3	-	6.0
Moonshine Springs	10	-	0.75
Shovel Spring	0.25	-	-
Mountain Spring	-	-	-
Bootleg Spring	1	-	-
Rainbow Spring	dry	-	-

These springs are part of an aquifer system extending from the Spring Mountains to Lake Mead and the Colorado River. Little else is known about this system. The recharge area is the Spring Mountains west of the Red Rocks area where rainwater and snowmelt begin the long journey to the sea either by overland flow through the streams and washes or through the ground as groundwater. It is thought by Dr. Robert Kaufman of the Desert Research Institute (1974) that the water enters the ground and flows through the rocks along fractures. If this is so then the travel time through the rocks may be relatively short (two to 10 years). This underground flow is generally toward and into the canyons.

The many springs found in the area are the result of the water encountering a rock type that will not allow water to flow through it. The water is diverted along this impermeable layer and where this layer is exposed at the land surface a spring is formed. The water then flows across the ground for awhile, giving rise to short creeks, until it seeps back into the ground. This time, however, it enters the sand and gravel of the alluvial fans at the base of the escarpment. As it continues to flow undergound in an easterly direction it eventually becomes part of the aquifer system of the Las Vegas Valley. This aquifer is within an almost completely closed basin but some water does escape into the Colorado River which in turn empties into the Gulf of California.

There is evidence (Kaufman, 1974, personal communication) that in the vicinity of the springs, the alluvial that the water trickles into after it leaves the spring is fairly shallow and the aquifer is of limited extent until the alluvial fans are reached.

Six springs have recently been tested for quality by the Nevada State Health Division at the request of the BLM. The results of these tests are shown in the following table (no. 11) in parts per million (ppm) and milliliters (ml):

TABLE 11
Spring Water Quality

Analysis Data	Springs					
	Oak Creek	Lone Pine	La Madre	Upper Willow Spring	Lower Willow Spring	Lost Creek
Biological:						
Coliform bacteria (per 100 ml)	More Than 1500	850	270	180	More Than 1500	20
Fecal coliform bacterial (per 100 ml)	30		Less Than 10	Less Than 10	Less Than 10	Less Than 10
Chemical:						
ph	7.71	7.98	7.78	7.69	7.69	7.44
Total dissolved solids (ppm)	329	366	519	174	200	321
Alkalinity (ppm)	264	318	300	90	94	222
Bicarbonate (ppm)						
Carbonate (ppm)	0	0	0	0	0	0
Total iron (ppm)	0.08	0.00	0.00	0.00	0.00	0.00
Total hardness (ppm)	303	370	449	146	139	283
Calcium (ppm)	62	64	94	37	36	59
Magnesium (ppm)	36	51	52	13	12	33
Sulfate (ppm)	31	23	117	50	46	60
Chloride (ppm)	3	5	6	5	4	5
Nitrate (ppm)	1.5	1.4	0.2	0.1	0.0	.09
Sodium and Potassium (ppm)	6 + 1	6 + 0	9 + 1	7 + 1	6 + 1	7 + 2
Arsenic	neg.	neg.	neg.	neg.	neg.	neg.
Fluoride	0.00	0.00	0.10	0.00	0.05	0.16
Manganese	0.00	0.00	0.00	0.00	0.00	0.00

The maximum biological and chemical limits for public water supplies and the recommended limits for private supplies established by the U.S. Public Health Service and the Nevada State Health Division are as follows:

TABLE 12
Public Health Standards

Coliform bacteria and fecal coliform bacteria	less than 1/100 ml
Total dissolved solids	no more than 500 ppm if no other source is available
Nitrate	no more than 45 ppm
Iron and manganese (combined)	no more than 0.3 ppm
Magnesium	no more than 125 ppm
Calcium	no more than 250 ppm
Sulfate	no more than 250 ppm
Chloride	no more than 250 ppm
Arsenic	no more than 0.05 ppm
Fluoride	no more than 2.4 ppm

Comparing these standards with the preceding quality data, it is evident that none of the springs tested meet these standards and cannot be used for public consumption without treatment. All of the springs are contaminated with coliform and fecal coliform bacteria, indicators of possible disease organism contamination. In addition, La Madre Spring exceeds the standard for total dissolved solids.

There is even less information concerning the water quality of the subsurface water. Wells supply the water at Calico Basin (private source) and it is used without treatment but must be checked for quality by the Nevada State Health Division before it can be certified as safe for public use. The Necon Study (1973) reports the following for well water near the Blue Diamond portion of the Red Rocks in parts per million:

TABLE 13
Well Water Quality

Total dissolved Solids	467
Alkalinity	284
Bicarbonate	346
Total Hardness	370
Calcium	78
Magnesium	42
Sulfate	99
Chloride	1
Nitrate	1
Sodium and Potassium	9

This water meets acceptable standards but approaches the limit set for total dissolved solids.

Ten wells have been drilled in the area by the BLM. Seven were dry or contained insufficient water. Data for the three wells that produced water is as follows:

Well	Flow Rate in gallons per minute	Depth to Water
Willow Spring #1	40	190'
Willow Spring #2 (Red Rock Wash)	25	405'
Visitor Center	28	492'

Partial water quality data for these three wells is as follows in parts per million:

TABLE 14
BLM Well Water Quality

	Willow Springs #1	Willow Spring #2	Visitor Center
Calcium	35	38	84
Sodium	9	7	0
Magnesium	35	12	28
Bicarbonate	188	114	208
Carbonate	0	0	0
Sulfate	84	53	139
Chloride	6	7	7
Hardness	230	143	325

The water from all three wells is alkaline. The ph values are:

Willow Spring #1	8.2
Willow Spring #2	7.9
Visitor Center	7.7

Comparison of this data with that of the Necon study previously shown, indicates the water from these three wells contains much less dissolved material than the Necon well. They are lower in all the materials tested for except chloride. The Visitor Center well is also higher in calcium. Whether these differences are significant is uncertain. They could represent nothing more than normal variations within the aquifer or they could be an indication of a number of aquifers in the area each having its own chemical properties.

As with water quality, there is little data available concerning the flood hazard within the Red Rocks. Both Red Rock Wash and Cottonwood Wash, the main drainage channels within the Red Rocks, have been identified as flash flood zones (University of Nevada, 1972) Cooley et al (1973) have indicated that much of the land below the escarpment is subject to flash-flooding.

The U.S. Geological Survey reports (1972) the following flood data for Red Rock Wash near Willow Spring.

Date	Gage Height (ft.)	Discharge cubic feet per second
February 4, 1962	2.14	150
September 13, 1963	1.42	50
August, 1964	0.02	15
August 17, 1965	2.47	221
December 6, 1966	4.6	2,500
July 30, 1968	4.7	1,350
January 25, 1969	6.6	7,470

The U.S. Geological Survey (1971) and the BLM Nevada State Office (1973) have begun a site by site evaluation of the flood hazard in the Red Rocks area. The results, thus far, show that the administrative site as proposed by the master plan is outside of the 100 year flood frequency zone but the existing access and escape routes from Calico Basin are within this zone. The Willow Spring (Rocky Gap) site and its escape route are near but outside of the 100 year flood zone as is the site near Mud Springs. Bank erosion can be expected at Willow Spring (Rocky Gap) and the U.S. Geological

Survey recommends no developments be made near the wash bank.

9. Fire

Fourteen fires have occurred in the Red Rock area between July, 1970 and spring, 1974. Statistics show that an estimated 4 acres were burned with causes attributed to lightning (four fires), man (four fires) and unknown (six fires).

B. Living Components

1. Vegetation

The Red Rock Canyon Recreation Lands contain a complex diversified vegetative cover. Different patterns of slope, exposure, elevation, soils, drainage, and micro-climate result in a complex mosaic of plant communities. There are four basic groupings of vegetative types broken down into subtypes of similar plant composition (see map 8, page II-28). The basic groupings are desert shrub, riparian, cliff vegetation, and higher elevation wooded land.

a. The desert shrub area is found generally to the east of the sandstone escarpment and contains three vegetative subtypes:

The Spanish bayonet-blackbrush community supports Spanish bayonet, banana yucca, blackbrush, mormon tea, cheese-bush, spiny menodora, desert almond, sagebrush, bur sage, cholla cactus, dalea, turpentine bush, desert willow and catclaw. Grasses commonly found include needlegrass, bush-muhly, rough tobosa, Indian rice grass, and sand dropseed.

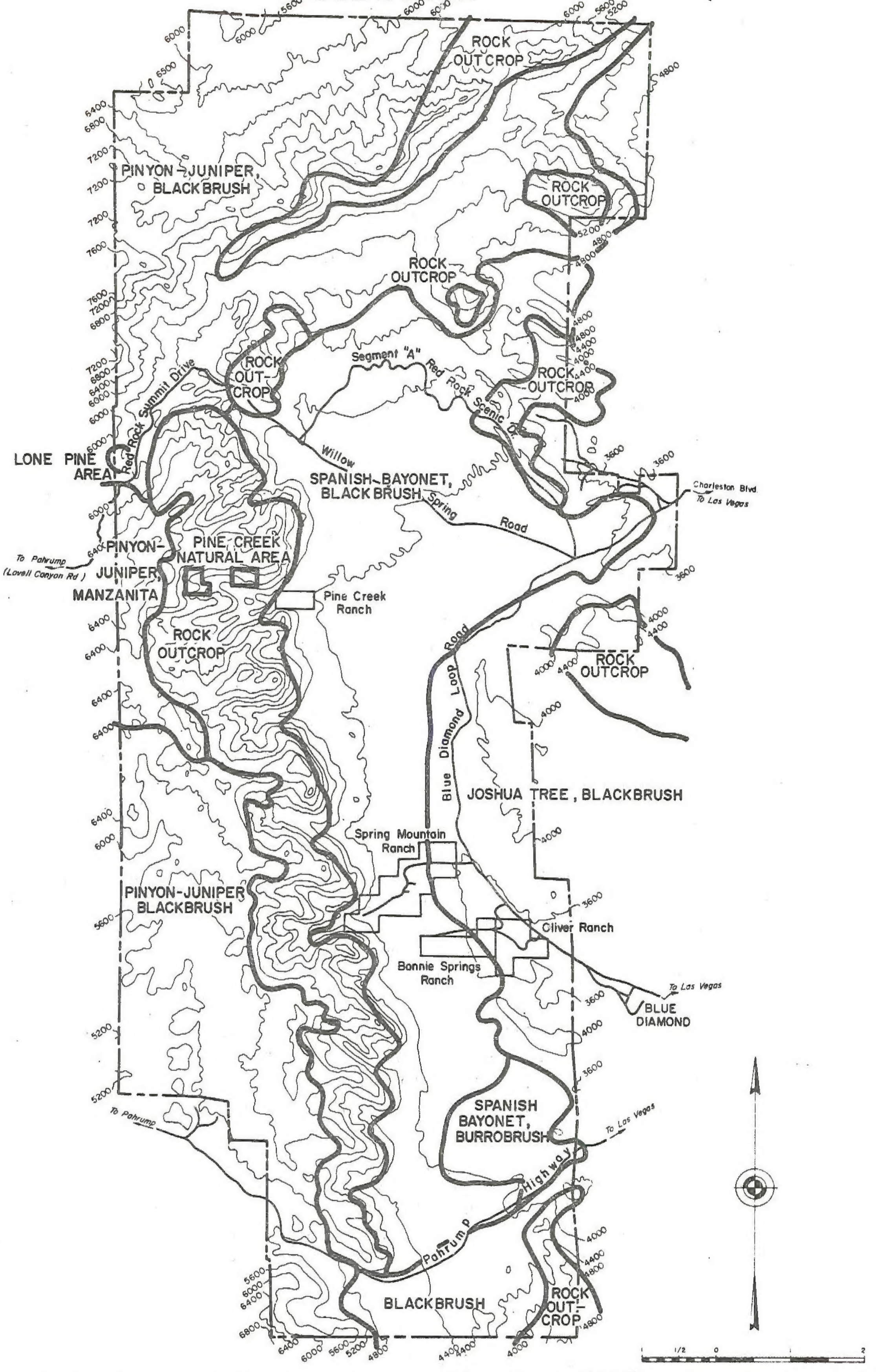
The Joshua tree-blackbrush community supports Joshua tree, Spanish bayonet, blackbrush, creosote bush, burrobrush, mormon tea, white sage, range ratany, paper-bag bush, and various cacti such as cholla and beavertail. Needlegrass and rough tobosa are the dominant grasses found in this community.

The Spanish bayonet-burrobrush community supports Spanish bayonet, burrobrush, hop sage, mormon tea, spiny menodora, white sage, creosote bush, salt bush, horsebrush, and dalea. Grasses found in this community include rough tobosa, bush-muhly, and Indian rice grass.

In the desert shrub area, moist years produce an exceptional growth of annual plants except in blackbrush areas. The wide variety of small flowering plants include buckwheats, marigolds, mallows, and desert poppy. Several species of annual grasses also occur in moist years.

b. Riparian vegetation is associated with the springs, creeks, and dry washes. Plants more typical of the riparian community include mesquite, catclaw acacia, salt cedar, and desert willow

VEGETATION



MAP 8

(catalpa). In moister areas, cattails, rushes, and other semi-aquatic plants occur.

c. Cliff vegetation is associated with the rocky canyons and walls of the escarpment and consists of various plant species. Some of these are turbinella oak, manzanita, cliffrose, desert barberry, desert ceanothus, snowberry, apache plume, juniper and pinyon pine.

d. The higher elevation wooded land occurs generally to the west and north of the escarpment. This grouping consists of juniper and pinyon pine, which occur in varying densities. It also includes blackbrush, silk tassel, manzanita, mountain mahogany, Joshua tree, banana yucca, mormon tea, sagebrush, snowberry, squawbush, wild currant, rabbitbrush, cliffrose, yerba santa, agave, mortonia and oakbrush. The grasses found in this community include needlegrass, fluffgrass and ricegrass.

In addition to these larger plant communities there are a number of unique vegetative types within the Red Rocks. The deep, cool, well-watered canyons of the escarpment support vegetation found only in this particular area. These canyons, especially Pine Creek Canyon, provide a micro-climate that supports plant species found only in the locality of the Spring Mountains. A list of these known plants includes:

Abronia orbiculata (a species of sand verbena)*

Astragalus tidestromii (a species of locoweed)*

Astragalus aequalis (a species of locoweed)*

Astragalus aerrectus (a species of locoweed)*

Opuntia multigeniculata (Clokey's cholla cactus)

Penstemon bicolor (a species of beard-tongue)*

Cordylanthus glandulosus (a species of bird's-beak)*

Angelica scabrida (a type of Queen Anne's Lace)*

Polystichum scopulinum (a type of sword-fern)

Draba sp. (a type of mustard)

Coryphanta rosea (a type of pincushion cactus)

Many of the above plants (marked by an asterisk) are found nowhere else in the world. Others are found nowhere else in Nevada and others are unique populations of plants that occur only in the southern Nevada - southern California area. According to Dr. Wes Niles of the University of Nevada, Las Vegas it is this unique vegetative grouping that makes Pine Creek so interesting scientifically and is the reason the area was designated a Natural Area by the BLM. It should also be pointed out that the above list is not definitive as other rare plants may also exist. The Ponderosa pine existing at Pine Creek are also of interest in that thay occur at an elevation unusually low for the tree. They may represent a relict population once part of a larger pine forest. For unknown reasons these trees may have survived in this small pocket long after the rest of the forest disappeared. These trees as well as the other plants at Pine Creek are presently being studied by U.N.L.V.

In the past 40 years, these plants have been subjected to heavy collection pressure. The sword-fern which was probably the most commonly collected plant in the area has been reduced from large beds and glades to only occasional plants through trampling and collection (Vincent, 1974). These plants are better protected now but some collection probably still occurs.

The Lone Pine area of the Red Rocks is another interesting area in that a number of plant communities occur together at this site. These include the desert shrub, riparian, cliff and higher elevation wooded land communities along with some Ponderosa pine. There are many specimens of red bud in this area along with other interesting plants such as columbine. This area has been suggested as a Natural Area because of this diversity of plants.

Rare or unusual plants are not restricted to these two areas, however. The agave that is a conspicuous part of the cliff community (*Agave utahensis nevadensis*) occurs only in the Spring Mountains of Nevada of which the Red Rocks are a part and the Ivanpah, Clark and Kingston Mountains of adjacent California (Breitung, 1968). The Charleston Mountain prickly pear cactus (*Opuntia charlstonensis*) occurs only in the higher elevation wooded areas of the Spring Mountains of which the Red Rocks are a part (Bradley and Deacon, 1965). Clokey's cholla cactus has been reported to occur at the proposed Interpretative Center site as well as at Pine Creek.

2. Wildlife

There are more than 45 species of mammals, 100 species of birds, 30 species of reptiles and amphibians and many species of invertebrates (animals lacking backbones) in the Red Rock Canyon Recreation Lands (for a list of species and habitat preferences see Appendix III and map 9 for habitat area).

These animals are all adapted either physically or behaviorally to life in the desert. Many get water from succulent plants and do not require drinking water. Some have special respiratory or excretory systems designed to retain as much moisture within the body as possible. Such animals can survive with little drinking water. Most of the species discussed in this section are nocturnal, venturing outside to hunt prey or find water only after the sun (which can raise ground temperatures to more than 130° in the summer) has set. Some species pass through periods of inactivity (estivation and/or hibernation) to avoid extremes of temperature and food or water shortages.

Water, food, cover and living space are the four basic habitat needs of wildlife. The quantity and quality of these four needs determines the numbers of and variety of animals that can exist in an area.

In the Red Rocks wildlife can obtain water from several sources. First, there are many springs that do (or with a little modification can) provide water for wildlife. Second, wildlife utilizes potholes that fill up with water after snow thaws or after thunderstorms. The sandstone areas along the escarpment are important in this respect. Finally, wildlife can obtain water at man-made water developments. There are three water guzzlers (a covered device to catch and retain water for wildlife) and two man-made reservoirs present in the Red Rocks (see map 7, page II-21). These reservoirs are less than an acre each. Water quality is unknown.

In the Red Rocks, herbivores (animals which feed on vegetation) rely on grasses (desert needle, squirrel-tail, Indian ricegrass, blue grama, red brome, galleta), forbs (desert mallow, desert trumpet, penstemon) and shrubs (cliffrose, jointfir, sagebrush, buckwheat, bitterbrush, curlleaf mahogany and snowberry). Wildlife uitlizes all Parts of these plants--leaves, stems, roots, seeds, fruits and flowers.

Yucca, creosote bush, blackbrush, sagebrush, turbinella oak, pinyon and juniper trees provide cover for many animals above ground. Other animals take refuge in burrows below ground or in caves or under rock piles. The best cover for a surefooted mammal like the bighorn sheep is steep, rocky outcrops which allow it to outrun its enemies.

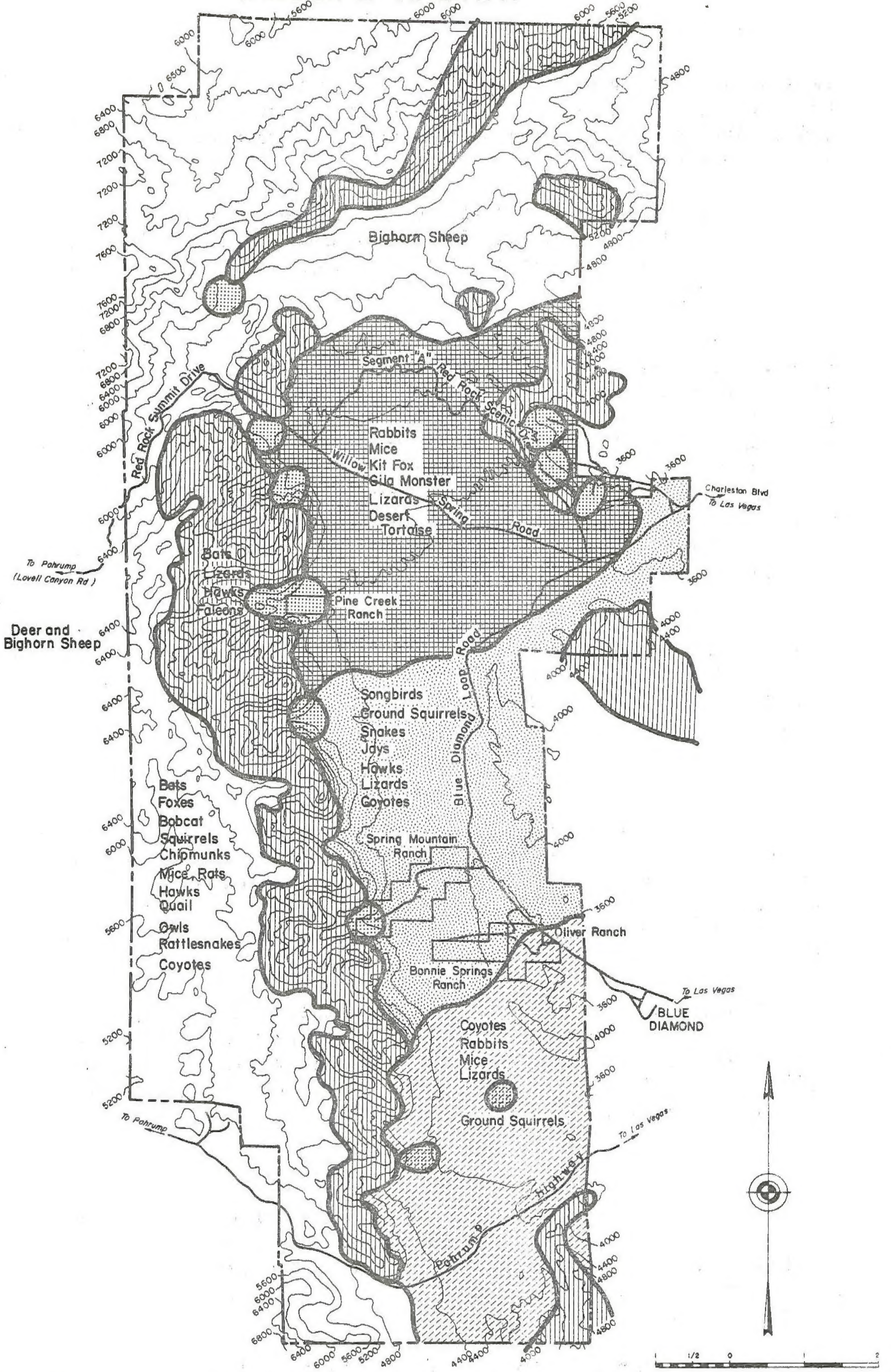
Living space is also vital to wildlife. Some species need large areas undisturbed by man, where they can obtain their food and raise their young in peace. An ideal habitat would have an interspersion of open areas and good cover (for escape, resting and raising young).

a. Mammals

Mammals are warm-blooded animals and more than 45 species are present in the Red Rocks. Mule deer, bighorn sheep, mountain lions and cottontail rabbits are valuable game animals. Several furbearers are also prevalent in the area--gray foxes, badgers, coyotes and bobcats.

The only mammal in the Red Rocks classified by the U.S. Fish and Wildlife Service (1973) as threatened is the Spotted bat. Little

WILDLIFE HABITAT



☐ Pinyon / Juniper Woodlands	▦ Blackbrush, Creosote Bush, Spanish Bayonet, Banana Yucca	▨ Blackbrush, Burrobrush, Bursage, Spanish Bayonet
▥ Rock Outcrops	░ Joshua Tree, Blackbrush, Banana Yucca	◌ Springs, Riparian Habitat

MAP 9

is known about the numbers or habits of this species.

One endemic species appears in the region. The Palmer or Charleston Mountain chipmunk is found only in Clark County.

The kit fox also has special significance because it is protected by the State of Nevada by regulation. It is illegal to capture, kill, sell or purchase any of these animals. There are several factors threatening the kit fox. They include high automobile mortality (because they often feed on rabbits and rodents killed on the road), loss of habitat, poaching, off-road vehicle traffic in areas important to the fox and traps set for other carnivores.

The most highly valued mammal in the Red Rock area is probably the desert bighorn (Ovis canadensis nevadensis). Prior to the 1850's bighorn were very common throughout Nevada and the rest of the Southwest. However, as white men began to settle in the area during the late 1800's and early 1900's, the bighorns' habitat was altered and their numbers decreased drastically. Overgrazing by livestock depleted supplies of perennial grasses essential to bighorn survival. Livestock and feral animals also competed with bighorn for scarce supplies of permanent water. Settlers harvested large numbers of sheep, particularly during the depression era. Finally development--towns, roads, recreation sites--simply drove intolerant bighorn sheep out of many areas. The result of all this was that by the 1950's, low numbers of sheep were restricted to a relatively few mountain ranges in central and southern Nevada. The Red Rock region is one of these areas. It contains 25,000 acres of important yearlong habitat and another 40,000 acres of marginal habitat.

Today, because of their scarcity and their beauty, bighorn are greatly appreciated by hunters and nonhunters alike. A lottery is held annually to determine winners of the few tags that are issued. The demand for the opportunity to hunt a trophy ram is great. (In 1972 there were 66 applicants for every resident tag available and 57.8 applicants for every non-resident tag). Photographers and sightseers also treasure spotting a small band of sheep.

Due to conservation efforts, the rapid decline of bighorn populations has slowed down. Some problems still exist, though, and new threats are looming on the horizon. Off-road vehicles, wild burros, urbanization, new roads, power lines, and new recreational developments all whittle away the habitat components--palatable grasses, forbs & browse, undisturbed waters, escape cover and living space--vital to bighorn survival.

This animal has recently been made the state animal of Nevada.

b. Birds

The Red Rocks area hosts more than 100 different species of birds. They occupy all the biotic communities in the area. There are many permanent residents, but a large proportion of the birds (up to 1/3 of those species found in the pinyon/juniper community) are common only during the summer months. Other species pass through the Red Rocks during spring and fall migrations.

The bird species in the Red Rocks exhibit a wide variety of habits. Most feed on a combination of small insects, seeds and fruits. But some, like the flycatchers subsist mainly on flying insects. Others like the hawks specialize in larger prey--rodents, rabbits and reptiles. Finally, some like the turkey vulture, are scavengers. Nesting habits also vary greatly. Birds nests can be found anywhere from bare ground to precarious ledges atop cliffs.

Birds in the Red Rocks are important to some recreationists. Gambel's quail and mourning dove are important game species (seasons are held annually in September and October). The numerous varieties of songbirds are valued by bird watchers, wildlife photographers and sightseers.

Several species found in the Red Rocks have special status. All the species of the order Falconiformes and Strigiformes are classified as "protected species" in the State of Nevada. They include the Golden eagle, Prairie falcon, American kestrel, Cooper's hawk, Red-tailed hawk, Sharp-shinned hawk, Great Horned owl, Long-eared owl, Screech owl and Turkey vulture. It is illegal to trap, possess, sell, purchase, transport or destroy any of these birds or their nests or eggs. The nighthawks (order Caprimulgiformes) are similarly protected.

The problems faced by these birds today are numerous and most are related to human disturbance. Poaching, egg collecting, harrassment (especially during incubation), climbing and hiking below active aeries (cliff nests), habitat destruction and developments which drive away important prey species all threaten the survival and propagation of these species.

Several other species of birds present in Red Rock Canyon Recreation Lands have restricted ranges and/or are present in low numbers in the Southwest. They include the Tree swallow, Hammond's and Dusky flycatchers, LeConte's thrasher, Gray vireo, Cassin's finch and Black-chinned, White-crowned and Song sparrows.

c. Reptiles and Amphibians

Any visitor to the Red Rocks is likely to see a variety of reptiles and amphibians. More than 30 species can be found in the area. Amphibians are usually found in springs, roadside ditches or in potholes where water has collected temporarily. Reptiles are most commonly found in the creosote bush, blackbrush or desert riparian communities where they seek shelter in rock crevices, under yucca debris, under and among shrubs and in burrows.

Reptiles and amphibians are important members of the ecosystem. They devour insects, small mammals and plant material and, in turn, provide food for mammals and birds. Some eat animals that are hazards to man (certain insects, scorpions, spiders), while others (Gila monsters, rattlesnakes) can be dangerous to man when they are cornered or molested.

Two reptiles found in the Red Rock area have special status. Both the Gila monster (Heloderma suspectum) and the Desert tortoise (Gopherus agassizi) are classified "rare" by the Nevada State Board of Fish and Game Commissioners ("Classification of Wildlife, State of Nevada", effective July 1, 1970). A rare species is one that is in such small numbers throughout its range that it may be endangered with extinction if its environment deteriorates any further. It is against the law to take from the wild, sell, purchase or kill these protected animals.

d. Invertebrates

Invertebrates (animals without a backbone) play an important part in the ecosystem of the Red Rocks area. They dwell in a wide variety of habitats - everywhere from the driest patches of sand and gravel to the bottoms of springs. They have a great diversity of habits. Some feed on plants, either aiding the vegetation (through pollination or seed dispersal) or destroying it (by damaging plant tissues or transmitting plant diseases). Some are predators feeding on other invertebrates. Others are parasites living on or in the bodies of mammals, birds, reptiles, amphibians or insects, becoming irritants or vectors (transmitters) of disease. Still others help in the decomposition of dead plants and animals. Almost all invertebrates are beneficial because they are food sources for vertebrates (animals with a spinal column).

Invertebrates that occur in the Red Rocks include: snails, crustaceans, millipedes, centipedes, spiders, scorpions, mites, ticks, and insects.

3. Wild Free-Roaming Horses and Burros

The Wild Free-Roaming Horses and Burros Act of 1971, placed all unclaimed and unbranded horses and burros and their progeny which are present on national resource lands under the sole jurisdiction of the Secretary of the Interior. It is a federal offense to capture, kill or harass these animals or to process their parts into commercial products. Any such offense can result in a $2,000 fine and/or one year in prison. It is the job of BLM to see that wild horses and burros are protected, managed and controlled to maintain a natural ecological balance on national resource lands.

Five wild horses can be seen regularly in the Red Rocks. They sometimes water at Mud Spring. During the summer horses usually water daily or every other day, during dusk or pre-dawn hours. They usually stay within 7 miles of water. Horses travel further distances during the winter when the temperatures are lower and other sources of water (like snow melt) are available. Horses prefer grasses, but eat other plants as well.

Burros are more numerous than horses in the Red Rocks. About 30 to 40 burros can be found around Calico Basin, the Blue Diamond Dump, the Spring Mountain Ranch and the Lovell Canyon side of the Red Rock Canyon Recreation Lands. Burros have a high reproductive rate (they breed every year and have long breeding seasons). The only potential predator on burros is the mountain lion. Lions are not numerous in the Red Rocks at this time. Therefore the burro population could be expected to increase in the future.

Burros utilize the same forage as bighorn sheep, mule deer, quail and other wildlife species. Hansen and Morton (1973) determined that burros in the Lower Grand Canyon had a diet composed primarily of grasses. It is presumed that the burros in the Red Rocks would have the same diet.

Several studies have been conducted in the Death Valley area (by Sanchez, Russo and others) to determine the effect of large burro populations. During the spring, fall and winter burro bands are scattered and they make use of snow melt and potholes for water. But during the summer, burros are concentrated around permanent water sources like springs. Some effects a large, concentrated burro population has on the environment include:

a. Eliminating desirable forage by eating, uprooting and trampling plants.

b. Polluting water with urine and feces.

c. Usurping all the water and driving other wildlife from the areas near springs.

d. Trampling burrows used by small animals.

e. Becoming a hazard to recreationists - some adult males may attack humans invading their territories.

Free-roaming wild horses and burros do, however, hold a romantic attraction as a representation of America's cultural past. Due to this national public interest in protection of these species, the Federal legislation mentioned previously was passed.

4. Grazing and Livestock

There is no livestock grazing on the BLM administered lands in the Red Rock Canyon Recreation Lands. The State Park System recently purchased the Spring Mountain Ranch and the Pine Creek Ranch properties to which the grazing privileges involving these areas were attached. Currently the State Park System has not made a decision on use at the Spring Mountain Ranch and Pine Creek Ranch and the grazing associated with these ranches.

Range improvements constructed in past years to facilitate livestock management include fencing and spring developments. These have been financed and constructed by the operators in some instances, and by cooperative agreement with BLM in others.

5. Timber (Vegetation products)

The major forest cover found in the area is a woodland type, consisting of pinyon pine and juniper trees. This forest is located on the upper escarpment west of the sandstone formation. This forest has potential for Christmas trees, fenceposts, firewood, pinyon nuts, and aesthetic greenery. One of the vegetation production activities is the gathering of pinyon nuts. There is also some indiscriminate and trespass cutting of timber for firewood taking place in the area. Patches of Ponderosa pine are located in the higher elevations and in isolated deep canyon bottoms. The Ponderosa pine stand found in the isolated environment of the Pine Creek Canyon Natural Area is truly unique for this region. An area having potential for designation as a Natural Area because of its timber type is the Lone Pine area on the upper escarpment. Both the Pine Creek Canyon and Lone Pine area are located in transition zones between arid and humid vegetative types.

C. Ecological Interrelationships

All of the components thus far discussed, the non-living as well as the living, interact in an extremely complex way. These interactions form a dynamic whole called an ecosystem. These interactions are understood only in their broadest sense and much research must yet be done before even the simplest ecosystem can be understood completely. In the Red Rock Canyon Recreation Lands there are several vegetative types, numerous animals, a variety of soils, a number of climatic zones and different levels of water availability. Obviously, with so many variables only a broad-brush discussion is possible at this time.

Regardless of the ecosystem involved, certain processes occur. These include an energy cycle, a nutrient cycle, a water cycle, a food web and an adaptive process.

1. Energy Cycle - the sun is the ultimate source of all energy on earth. Plants utilize it to manufacture food. These plants are eaten by herbivorous animals which are in turn eaten by carnivores. At each stage some of the initial energy is lost but enough is transferred at each step to keep the plants and animals alive.

2. Nutrient Cycle - in addition to energy from the sun, plants require nutrients to manufacture food. Minerals and water are extracted from the soil and carbon dioxide is extracted from the air to produce this food. These raw materials are used to produce the sugars, starches, proteins and fats the plants need to stay alive and grow. These same organic compounds are needed by animals that cannot produce them. Hence animals eat plants. Carnivorous animals eat other animals for the same reason.

3. Water Cycle - the generalized water cycle is as follows:

Precipitation falls in the form of rain or snow. This water leaves an area through runoff, infiltration, evaporation or use by plants. Runoff enters streams and eventually the ocean. Ground water also migrates into streams and the ocean.

In the Las Vegas area rainfall is severely restricted. Much of the rain that does fall is lost to runoff. What little actually gets into the soil is quickly evaporated by the heat or dry winds or is picked up and stored for later use by the plants.

4. Food Web - the basics of the food web have been outlined in the energy and nutrients cycle previously. To this must be added omnivorous animals that eat both plants and animals, scavengers that clean up whatever was missed by other animals and decomposers that break down the leftovers that are then used again by the plants to produce new food.

5. Adaptive Processes - the plants and animals of the area have developed over long periods of time and through various wet and dry periods and minor landform changes. The plants have adapted to cold winters, hot summers and long drought periods.

The animals have adapted to exist and maintain their species on the available food supply.

With the previous data as a backdrop the various ecosystems found within the Red Rocks can be discussed.

Desert Shrub--the area below the escarpment is part of the

Mojave Desert and its flora and fauna reflect this desert association. As indicated under the Vegetation section of this statement this is not a homogeneous community of uniformly distributed plants and animals. Rather it is a patchwork of subcommunities in which certain plants and animals occur. This patchwork is due largely to differences in soil, climate, etc.

The critical factor for ecosystem as a whole is water. As indicated previously, rainfall increases with elevation. The increase in rainfall and therefore in water, plus the lower temperatures experienced at higher elevations control the distribution and abundance of plants and animals. Generally, the more water available the greater is the diversity of plant life and the number of plants. This increased diversity is reflected not only by the perennial plants and the animals but by the annual plants as well. Only a few of the commoner, tougher species of annual plants occur in any numbers in areas consisting almost exclusively of creosote bush, a typical plant of the low, hot, desert valley floors. Very few of these annuals occurred among the creosote bushes even in the extraordinarily wet winter of 1972 and spring of 1973. A greater number and diversity occurred in those areas that also had Mojave yucca and Joshua trees.

Because the rainfall is scattered and infrequent and water supplies are small, the desert plants have evolved a number of different methods to utilize water rapidly, store it for long periods or in other ways avoid the dangers of drying out. Many of the perennial plants have shallow roots that absorb water quickly. These plants also have some means of storing this water for later use. The cacti are notable examples of this type of plant. The catclaws and mesquites have adapted to their environment by evolving long tap roots to reach water. Since streambeds generally contain some underground water even when the stream is dry, these plants tend to grow along washes where they can use this water supply. Both plants are common members of the riparian community.

The annual plants have evolved a system that bypasses the hazards of long, hot, dry summers entirely. These plants, often called "ephemeral plants", sprout, grow, bloom, set seed, and die within a month or so. The dormant seeds survive the heat and sun if covered and remain viable for decades waiting for another wet year to repeat their cycle.

Reproduction among the perennial plants is a rare event. Flowering and seed production may only occur once every five or 10 years or perhaps longer. Since most of these plants live for 20 years and some, such as the Joshua tree, for as long as 200 years, they can afford to wait for exactly the right conditions to begin a new generation.

Because of the harshness of the desert in summer when temperatures are high and humidity is low, several groups of plants have evolved special mechanisms for protecting themselves. Many plants, when the light level and temperatures rise, produce a screening substance which blocks the light and stops photosynthesis until the light level drops to tolerable levels.

Others, including some of the saltbushes, have evolved a high-efficiency photosynthetic system allowing them to grow and produce food at light and temperature levels that other plants find intolerable (Bjorkman and Berg, 1973). Some of the cacti have evolved systems that can store carbon dioxide gas rather than release it at night. This storage allows the plant to produce food during the day without opening their pores and releasing valuable water (Patten and Dinger, 1972).

Still other plants have evolved substances which are secreted into the soil around their roots or from the leaves inhibiting the sprouting and growth of new plants that could compete with them for the small amounts of available water. These secretions cause the even spacing between plants and give the desert a park-like, planned appearance. Recent studies (del Moral and Cates, 1971) indicate that such secretions may be more common than previously suspected expecially among desert plants.

Most desert plants also have the ability to extract moisture from drying soils, especially fine sands where the moisture is very tightly held.

Plants cover between two and eight per cent of the ground surface area. The rest of the surface is covered by a gravel desert pavement which is the result of wind winnowing of the finer soil material. The soils are infertile and plants must depend upon decayed roots and wind-blown materials for the nutrients they need. Many plants can use atmospheric nitrogen with the help of symbiotic bacteria. These bacteria take the largely unreactive nitrogen gas from the air and transform it into nitrates used by the plants to produce proteins.

The lichens, a close association of a fungus and an algae, provide new soil materials by their destruction of rock to provide food for themselves.

Because of the low plant density, the presence of surface hard pan and the desert pavements, there is little to impede the sheet flow of water overland during and after rains. Most of this water is rapidly collected in the washes which move the water downslope. This rapid collection and downslope movement makes these washes very flash-flood prone. Very little of this water seeps into the soil and what little does is soon evaporated in the heat and dry winds. The hydrologic cycle is therefore one of precipitation and evaporation. Seldom does more than two per cent of the rain reach the ground water.

The patchy distribution of plants in the desert shurb community is carried over to the animals as well. This diversity is greatest where the floral diversity is also high. Areas of low plant diversity such as the creosote-bush subcommunity have a corresponding low animal diversity, due mainly to the small and restricted nature of the food supply.

Animals depend upon plants for more than food. Plants provide shade from the sun, hiding places for small animals and so on. Several birds including Scott's oriole and the flickers use Joshua trees as nest sites and wrens and mice use the cholla cactus in the same way. Such dependence upon plants may reach to extremes such as the case of the night lizard. This lizard is so dependent upon the Joshua tree for shelter and an insect food supply that it cannot survive away from the plants (Jaeger, 1940).

In the same way that animals depend upon plants, the plants also depend upon animals. Rodents, for example, gather and bury seeds for later use. When rodents are eaten by coyotes, many of their caches are "forgotten", but the buried seeds are protected from the sun which would sterilize them. These protected seeds will sprout and grow when conditions are favorable and most of the brush plants are probably established in this way.

Other plants, notably the cacti and mesquites, depend upon animals to disperse their seeds eating the fruits or pods and elimination of the undigested seeds at another site. The desert mistletoe, a plant that is parasitic on mesquite, produces fruits eaten by birds which then wipe the sticky seeds onto branches in order to clean them off of their bills. Since these birds perch in mesquite the seeds are placed on new sites and on new trees by the birds.

The yuccas have taken their dependence on animals one step further. The yucca flower can only be pollinated by the small yucca moth which also lays its eggs in the yucca blossoms. The moth larvae eat many of the developing seeds but enough remain to provide for another generation of plants. The moth is also dependent upon the yucca since the moth larvae cannot survive on any food other than yucca seeds.

While a desert ecosystem may contain relatively few plants and animals, the interrelationships among them are quite complex. Such relationships may involve several organisms in different relationships to each other. For example the desert mistletoe, parasitic mesquite, provides food for birds and depends upon birds for the transport of its seeds formed in insect-pollinated flowers.

These relationships are static and changes as do occur may take longer than can be perceived in a human time frame. There is evidence the Joshua tree made up part of the diet of the now extinct giant ground sloth inhabiting the area during the Pleistocene Era (Jaeger, 1940). Recent changes in the ecosystem include the introduction of new animals such as cattle, horses, burros and man.

The wild horses and burros are the descendants of animals that escaped or were set free. They survived and bred and carved a niche for themselves in the existing ecosystem. Their effect on the ecosystem is uncertain. Opinions range from no effect to definite and adverse.

Riparian--the riparian community includes those plants and animals normally found along washes and near springs. Several of the more common plants have already been mentioned, namely mesquite and catclaw. Other plants normally found in association with them are salt cedar and desert willow (catalpa). These plants depend upon long tap roots to gather underground water to survive. Because such water is almost always available, these plants are normally green and contrast sharply with the brown tones of the desert shrubs especially during the hot summers.

The fauna is similar to the desert shrub community but because of the increased vegetation providing both food and shelter, many animals reach peaks of abundance here. These include lizards, snakes, birds, and small mammals such as rats and mice (Bradley and Deacon, 1965). Because of the relative abundance of prey, coyotes, foxes and bobcats habitually follow the washes in search of food.

The many springs in the Red Rocks are considered part of this community but with a number of differences. Since water exists at the surface, these springs and their short creeks support not only the riparian community but an aquatic community as well. They also support the desert shrub and woodland community animals since they are the only available sources of water in the area, except for a few man-made reservoirs.

The aquatic community supported by the springs and creeks is similar in many ways to the other ecosystems. There is a food chain made up of plants, herbivorous and carnivorous animals, the usual scavengers, decomposer loops and so on. Minerals and organic raw materials are dissolved in water where plants can gather and use them, and oxygen and carbon dioxide are available for plant and animal respiration and photosynthesis.

Sunlight is still the prime energy source. It is used by the aquatic plants, both micro and macroscopic, to produce food through photosynthesis. Animals include many microscopic forms such as rotifers, protozoans, etc., as well as larger animals such as insects and frogs. There are no fishes in these springs.

The availability of water also allows a number of aquatic and semi-aquatic plants to survive in the area. These include cattails, rushes, horsetails, and a number of flowering plants as well.

Some ephemeral pools in the Red Rocks (pools that fill with rain water and periodically dry up) may support a fairy shrimp which has adapted to such conditions. They survive the dry periods by laying eggs resistant to drying out and which lie dormant in the dried mud ready to hatch when water returns (Burton, 1956).

There are no animals completely restricted to this community but many, especially ground or crevice dwelling creatures, reach their maximum abundance on the cliffs. These include many of the rodents, a number of lizards including the Western and Gilbert's skinks, which are rather uncommon in this area, and a number of bats (Bradley and Deacon, 1965).

Higher Elevation Wooded Areas-- this community occurs above and to the west of the escarpment. It is typified by both pinyon pine and juniper trees. Other plants commonly found are: sagebrush, holly grape, sumac, gooseberry, wild rose, buckthorn, snowberry and the endemic Charleston Mountain prickly-pear cactus (Bradley and Deacon, 1965). Many other plants from other communities including the desert shrub community also occur.

Very few reptiles occur in the community but a number of birds make it their almost exclusive home. These include the scrub jay, rock wren, western bluebirds, and others. The rare and endangered prairie falcon is known to nest in this community as well as in the cliff community. This community also supports the deer and bighorn sheep populations occurring within the Red Rocks. Mountain lion occasionally wander through the area in search of deer but generally prefer the higher elevations of the Spring Mountains. Other predators present include bobcat, coyote and fox.

Pine Creek--the Pine Creek area supports a unique flora. Some of the plants occur nowhere else in the world and a number occur nowhere else in Nevada. The Ponderosa pine here are also unusual because they are growing at a much lower elevation than they normally do. It is possible they represent the last hold-outs of a once larger forest that has disappeared.

With such a unique flora, it is difficult to say anything meaningful about their ecological interrelationships. Given the uniqueness of the plants themselves, it could be assumed their interrelationships and the conditions under which they survive are also unique. Only a great deal of research can answer all of the questions about Pine Creek's unique flora.

This flora shares the area with representatives of the desert shrub, riparian and cliff communities and many aspects of these communities are also present.

Lone Pine--this area is unusual not because it contains any known rare plants but because a number of the plant communities found within the Red Rocks overlap here. Representatives of the desert shrub, riparian, cliff and higher elevation woodland communities occur along with a few Ponderosa pine.

In this case it is not the plants themselves that make the Lone Pine area unusual but rather the interrelationships of four communities in one area.

D. Human Components

1. Archaeology

Man has occupied the region for at least 10,000 years, and perhaps longer. Gypsum Cave and Tule Springs, both near Las Vegas, have provided evidence of a big game hunting culture at about 9,000 B.C. Other hunting and gathering peoples were in the region in Pre-Christian times as evidenced by artifacts (Pinto Basin Points).

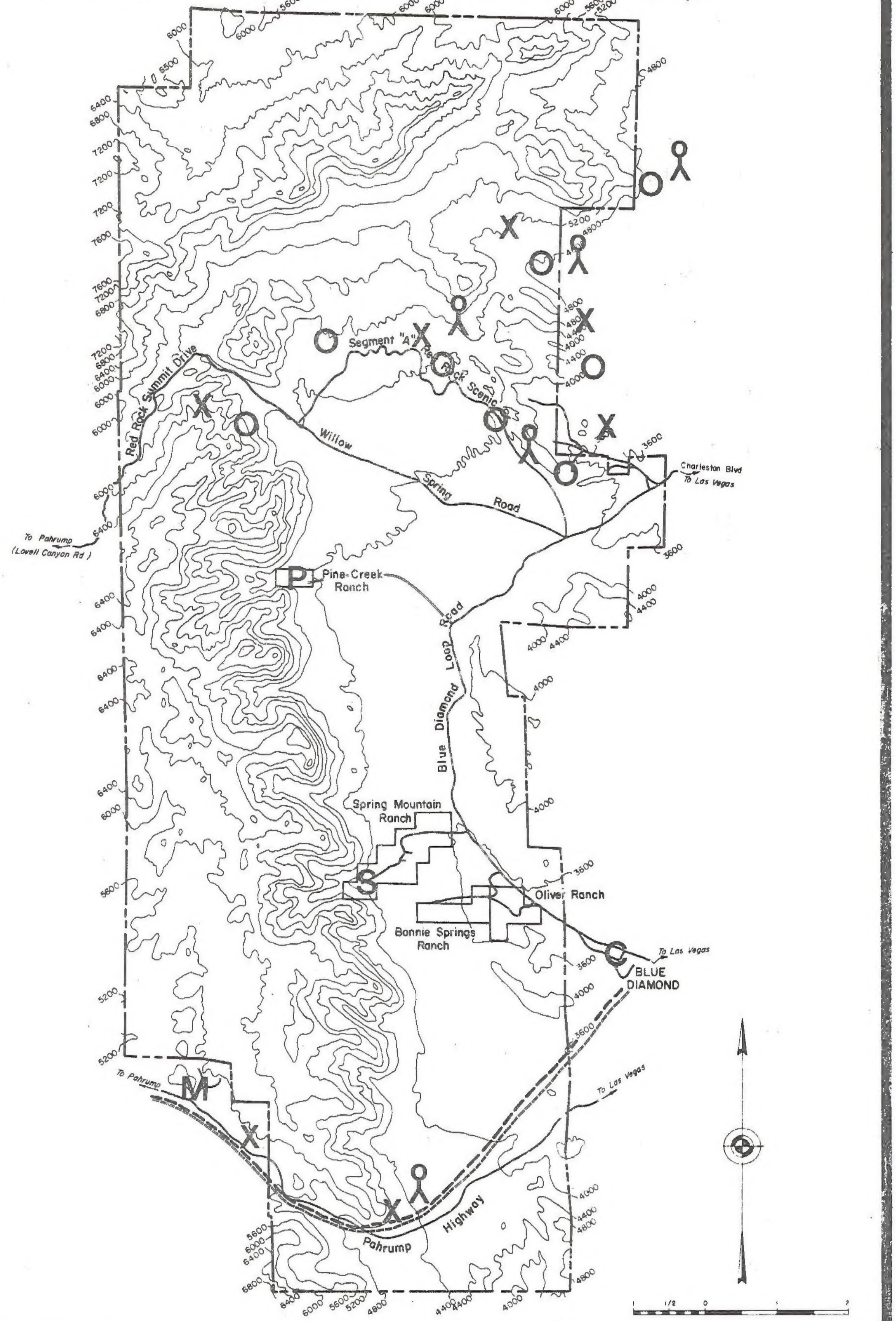
At about the time of Christ, a hunting and gathering culture was prevalent in the region. It was related to the general basket-maker culture spread over much of the Southwest during this period. The culture acquired the ability to grow maize, beans, and squash over time and settled down to a sedentary way of life until dispersed in the late 1100's. The people of this culture were centered on the lower Virgin and Muddy Rivers, living at first in pit houses and later in Pueblo-style surface dwellings. Although basically farmers, these People also hunted game and gathered plants. One of their use areas was the Red Rock area, as indicated by pottery, roasting pits, campsites, and possibly pit houses.

Sometime after 700 A.D., the southern Paiute entered the area. They were distantly related to the people of the Pueblo culture along the Virgin and Muddy Rivers, as some aspects of their life-styles were quite similar. They also traded among themselves.

The Paiutes were a gathering people doing some hunting, and having a very simple agriculture. They used some of the same roasting pits, campsites, and areas as the Pueblos. They also used windbreaks of brush and caves for semi-permanent dwellings. During the winter they gathered at specific village locations for social and religious rites. There are indications, through pottery mainly, of contacts in prehistoric times by both the Pueblos and the Paiutes with people to the south--people ancestral to the present-day Mohave, Yuma, Walapai, and others. (The previous data is a summary of information from Heizer and Baumhoff, 1962; Povrade, 1966; Shutler Jr. 1961; Shutler, Shutler, Jr. 1962; and Steward, 1938).

The archaeological resources have been well inventoried in the northern end of the Red Rocks, especially in Brownstone Canyon, Sandstone Quarry, Lost Creek, Willow Spring, Calico Springs and Ice Box Canyon (see map 10, page II-45). Sites can be expected wherever there is water in the surrounding uninventoried area. (Shutler, Shutler Jr.

HISTORICAL & ARCHAEOLOGICAL RESOURCES



X Roasting Pit

O Indian Campsites

M Mountain Springs (Paiute Spring) Old Spanish Trail Watering Spot

C Cottonwood Spring Old Spanish Trail Watering Spot

S Sandstone Ranch Structures

P Pine Creek Homestead

Petroglyphs or Pictographs

===== Old Spanish Trail / Mormon Trail

— — Fremont Route 1844

MAP 10

1960, and Brooks and Brooks)

The Willow Spring and Brownstone Canyon areas represent the most significant archaeological values in the northern portion of the Red Rocks. Long term prehistoric use of the Willow Spring and Brownstone Canyon area is indicated by the presence of significant numbers of rock shelters, roasting pits, and petroglyphs.

There is little known about the archaeological values in the south and eastern portions of the area. Significant sites are known to exist in the vicinity of Mountain Springs and Mule Springs west of the Red Rocks. The Mountain Springs site features several large roasting pits that are ideally suited for interpretation and protection. The site is easily accessible from the existing highway. The Mule Springs site was excavated in 1967 and subsequently vandalized, making it of doubtful public recreation value.

Pot robbing and vandalism are serious problems at many of the archaeological sites within the region. The sites within the Red Rocks have experienced low to moderate levels of damage. The Willow Springs, Brownstone Canyon and Sandstone Quarry sites have sustained much of the vandalism and disturbance in the Red Rocks.

2. History

Accounts of Mohave raids into the area for plunder and slaves exist. These intruders were followed by the Spanish, Mexicans, Mormon pioneers, and mountain men who passed through the region on a trail over Mountain Springs Summit which was to become known as the Old Spanish Trail and later the Mormon Trail.

At the time the first people of European descent visited the area, it was inhabited by southern Paiute Indians. Commercial travel on the Old Spanish Trail began in 1829-1830 with a caravan led by Antonio Armijo. The last major mule trail passed through the area in 1848. By this time the trail had become known as the Mormon Trail, reflecting a change in the backgrounds and origins of the trail users.

John C. Fremont passed along the trail during his return from California in 1844. He wrote that he hurried his trip through Nevada because of unfriendly Indians. Both Mountain Springs and Blue Diamond (west and east of the Red Rock Canyon Recreation Lands, respectively) served as watering spots for users of the trail. During this period, Blue Diamond was known as Cottonwood Springs and Mountain Springs was sometimes known as Paiute Springs. The trail users left little evidence of their passing.

The first settlement of the white man in the Red Rocks was at Sandstone Ranch (now Spring Mountain Ranch) staked out by James Wilson in 1867. The ranch has changed hands numerous times in its history. It later became the Bar-Nothing Ranch (also called the Krupp Ranch for its owner, Countess Vera Krupp) and the Spring Mountain Ranch when owned by Howard Hughes. The ranch was subsequently acquired by Fletcher Jones, who sold it to the Nevada State Park System.

Another homesteader in the area was Horace Wilson, who established his residence in Pine Creek Canyon in 1922. Nevada State Park System acquired this ranch in 1974.

No sites within the Red Rock Canyon Recreation Lands have been nominated for the National Register of Historic Places. Furthermore, no sites within this area have been identified as State of Nevada historic sites. (Sites and trails discussed are shown on map 10, page II-45). There are no national landmarks in the area, and no sites are presently being considered for nomination as historic places, national landmarks or state historic sites.

3. Lands Uses

a. Las Vegas Area Land Uses

Access to the Las Vegas area is excellent. The city is served by eight major airlines, one major railroad, and four major bus lines. Interstate 15 provides highway access from the southern California area (284 miles to Los Angeles) and from the northeast (450 miles to Salt Lake City). U.S. Highway 93 provides access to the northwest and south.

Natural gas, water, sewer service, electricity and telephone service are all available in the city of Las Vegas. Solid waste disposal in the Las Vegas Valley is provided by four major disposal areas. Only one of these areas is being operated at standards meeting EPA requirements. A serious littering problem exists on the vacant land surrounding the developed area of the city and it is especially noticeable along access routes to the Red Rock area.

The pattern of land ownership from the center of the Las Vegas Valley extending westward to the Red Rocks starts as almost solidly blocked private ownership in the valley centers, turning into a fragmented public-private land ownership on the western frontage of the city limits. This fragmented land pattern continues to the Red Rocks southwest boundary in the vicinity of Blue Diamond.

To the north, however, the fragmented land pattern extending west on Charleston Boulevard becomes another solid block of private ownership continuing to the east boundary of the Red Rock area and also includes the large block of private land within the boundary south of Calico Basin. The fragmented land pattern lying east of the Red Rock area is generally the remnants of Small Tract Act activities during the 1950's and early 1960's. These are generally 2 1/2 acres to 5 acre parcels on which scattered development is occurring for residential uses.

A large block of land extending southward from Calico Basin is privately owned. No plans are presently known for future development of this land. Present growth trends of the Las Vegas Valley indicate a northwest and western trend of expansion.

Lands to the north, west and south of the Red Rock area are basically unoccupied national resource lands being used for recreation, limited livestock grazing, hunting and off-road vehicle (ORV) use. An exception is the Mountain Springs residential community.

In the past, land in the Las Vegas Valley has been developed in a haphazard manner. One area may be subdivided and developed, but the next area to be developed will be located 3 to 4 blocks or more from the nearest developed subdivision. A "leap-frogging" type of development has been the pattern in this area. This has created problems and additional expense for local governments in providing such services as sewers, water, police protection, fire protection, and busing of school children. Public utilities have problems providing power and telephone service.

A 1965 study entitled "Economic Growth and Public Land Planning in the Las Vegas Valley" conducted by Dr. Gerhard N. Rostvold states the geographic pattern of urbanization in the Las Vegas Valley planning area between 1964 and 1980 will not create extensive pressures to release public lands for orderly commercial development. Dr. Rostvold predicts that the pressures for the release of public lands up to 1980 will primarily be motivated by speculative considerations.

He made no prediction of the need for releasing surplus lands beyond 1980 but he did state, "Bureau of Land Management operations should be directed toward an orderly transfer of lands within the fragmented area to private ownership". There are many undeveloped tracts of private land within the corporate city limits of North Las Vegas and Las Vegas, but very little Federal land is in this area except in the unincorporated county areas in the valley.

Waste in the Las Vegas Valley is handled in a variety of ways. Within the urban area sewage is collected by municipal sewage systems and transported to treatment facilities. After treatment they are discharged into the Las Vegas Wash which empties into Lake Mead. This has caused a number of problems that will be discussed later in the statement.

In the fringe areas where isolated homes are the rule, septic tanks are used exclusively for liquid waste disposal. The effects of such disposal upon the aquifer under the valley is unknown.

Solid waste is disposed of by its collection by municipal or private collection agencies. These agencies dispose of it in the county landfill located to the east of Las Vegas in the foothills of the Sunrise Mountains.

The Las Vegas Valley has some serious problems concerning sewage treatment. An Environmental Assessment Pollution Abatement Project, Las Vegas Wash and Bay report prepared by VTN, and Jones and Stokes

Associates, Inc., for the Las Vegas Valley Water District dated August 1, 1972, states the problem as follows:

"For many years, municipal and industrial wastes from the Las Vegas Valley have been discharged into Las Vegas Wash, polluting Lake Mead and the Colorado River downstream, in violation of interstate water quality standards. The wastes are derived from a multitude of sources: secondary treated effluent from the City of Las Vegas sewage treatment plant; highly saline cooling water from two power plants; highly industrial wastes from the Basic Management, Inc. (BMI) complex, inadequately treated secondary effluent from the City of Henderson sewage treatment plant; and agricultural irrigation, domestic irrigation and septic tank return flows.

When the wastes enter Lake Mead, algae feed on nutrients and form unsightly and odorous blooms in the Las Vegas Bay of the lake. The dissolved solids (salts) in the water (some 400 tons each day) mix in the lake and eventually flow downstream to water users in the states of Arizona, California, and into Mexico.

On December 23, 1971, the United States Environmental Protection Agency (EPA) instituted a 180-day enforcement action against the major polluting governmental agencies and industries. EPA presented evidence at a hearing on January 25, 1972, documenting the sources of the discharges and the violations of interstate water quality standards for Lake Mead and the Colorado River. Recognizing that proper planning was required to accomplish a solution, the 180-day enforcement action requires that a workable solution (or solutions) be scheduled and submitted to EPA for approval. If approved schedules are not kept, or are inadequate, the United States Attorney General may obtain a court order prohibiting further discharges. Violations of such an order would constitute contempt of court, and would be punishable by fine, prison sentence, or both.

In a separate action, the Nevada Legislature enacted a statute effective July 1, 1973, the practical application of which prohibits the construction of new subdivisions when their sewage would violate water quality standards after treatment. Present effluent from the City of Las Vegas and Clark County Sanitation District treatment plants serving the Las Vegas Valley does not meet State of Nevada discharge standards which became effective in July, 1973. The treatment processes which would be needed to meet these standards are not now planned to be added by either of these agencies."

b. Red Rocks Area Land Uses

(1) General

Access from Las Vegas to the Red Rock Canyon Recreation Lands is provided by West Charleston Boulevard and the Blue Diamond Road. From Pahrump, Nevada, the area is best reached by the Mountain Springs Summit Road. An alternate access route over unpaved roads from Pahrump traverses a route known as the Red Rock Summit Road which terminates at the Willow Spring area. In July of 1974 the Red Rock Summit Road was temporarily closed due to heavy flood damage.

Electricity and telephone services are provided to the Calico Basin area immediately east of the Red Rocks. Water is developed on site at Calico Basin and Bonnie Springs Ranch as well as the other ranches within the Red Rocks. Limited spring developments exist at Willow Spring, Red Springs and several of the smaller recreation sites. (See Water section under Description of the Existing Environment, page II-20). Power and telephone utilities have been extended within the recreation lands boundary to the Bonnie Springs and Spring Mountain ranches.

(1) Private Inholdings

Private inholdings within the recreation lands boundaries include the Calico Basin residential development, the Calico Spring Girl Scout Camp, the Bonnie Spring Ranch recreational development and the Oliver Ranch. (See map 2, page I-3).

The Calico Basin area is presently the site of residential construction. About 12 homes have already been constructed. The basin is an old Small Tract disposal area that, with the availability of power and telephone utilities, has become a concentration area for rural type homes.

The Calico Spring Girl Scout Camp is a 40 acre tract transferred by the BLM under the Recreation and Public Purposes Act to the Frontier Girl Scouts. Access to this area is through the Calico Basin. It is adjacent to the Red Springs area. (see Map #3, p. I-4 for location).

Bonnie Springs Ranch offers a 120 acre recreational development. Featured at Bonnie Springs are the Old Nevada western town, a narrow gauge railroad, restaurant, helicopter rides, riding stables and a live animal display. The western town, railroad and helicopter rides were recently added at Bonnie Springs. These additions have increased the recreational visitation to the Red Rock Canyon Recreation Lands.

The Oliver Ranch is immediately east of the Bonnie Springs Ranch. This ranch, generally restricted to residential use, is located on approximately 320 acres of private land.

(3) Nevada State Park System Acquisitions

The State of Nevada acquired two important private parcels within the Red Rock Canyon Recreation Lands boundaries in early 1974. These parcels consisted of 80 acres at the mouth of Pine Creek Canyon and the 520 acre Spring Mountain Ranch.

The Pine Creek Ranch parcel is significant because it offers a variety of sightseeing opportunities as well as providing a degree of protection to the unique botanical communities found in the canyon of

TABLE 15
Present Developments
(with all proposed areas of development listed)

	Developed Campsites	Picnic Sites	Access Road	Water * Developments	Interpretive or Hiking Trail	Usable Support Building	Remarks
Red Springs		X	X	X			Recreation resource administered by Nevada State Park System
Willow Spring (Rocky Gap)	X	X	X	X			BLM administered
Lone Pine		X	X	X			BLM administered
Pine Creek Ranch			X				Owned by Park System
Pine Creek Natural Area					X		BLM administered
Spring Mountain Ranch			X	X	X**	X	Owned by Park System
Ash Spring			X				BLM administered. Easement required for public access
White Rock Spring			X	X			Recreation resource administered by Park System
Sandstone Quarry			X				Recreation resource administered by Park System
Lost Creek							BLM administered
Ice Box Canyon							BLM administered
Oak Creek			X				BLM administered
La Madre Canyon			X	X			BLM administered. Group use site. Not open to general recreation use.
Blue Diamond Administrative Site			X				BLM administered
Mountain Springs Roadside Rest		X	X				Owned by Park System. Located on Mountain Springs Road
Calico Hills Wayside			X		X		Cooperatively administered. Located on Red Rock Scenic Drive Segment A
Red Rock Dedication Site			X		X		BLM administered. Located on Blue Diamond Loop Road
Foxtail Trailhead Roadside Rest			X				BLM administered. Located on Mountain Springs Road
Brownstone Road			X				Park System administered. Rough, unpaved road following wash.
Red Rock Scenic Drive Segment A			X				Cooperatively administered. Paved road.
Red Rock Summit Road			X				BLM administered. Rough, unpaved, road. Temporarily closed in 1974.
Blue Diamond Loop Road			X				County road. Paved.
Mountain Springs Road			X				Paved state highway. Also called "Pahrump Highway."

* See Water section, page II-20, for discussion of quantity and quality of available water.

** Guided walking tour

the north fork of Pine Creek.

Spring Mountain Ranch is valuable for both its sightseeing and historical resources. As discussed in the History section of this statement (page II-46), the ownership and names of the Spring Mountain Ranch have changed several times in its 107 years of existence.

The ranch historically served as a base of operations for livestock operations. In recent years it also became important for its speculative potential. The last private owner of the ranch had developed plans to create a small city within the Red Rocks complete with subdivisions, condominiums, etc. designed for country living outside of town but with all of the amenities of city living. The ranch was purchased by the Park System before any of these plans could be implemented.

The facilities on the ranch as it exists today, include a large main building and a number of outbuildings, some dating back to the early days of the ranch. A reservoir of about 5 acres is found in the upper portion of the ranch. This reservoir serves as the water supply for most of the ranch operation. Domestic water is supplied by a small well.

The Nevada Park System has indicated its development plans will take into consideration the findings of this environmental impact statement, as well as the results of a series of ongoing investigations of the water, archaeological and botanical resources of the Spring Mountain Ranch and Pine Creek.

The Nevada Park System and the BLM have agreed to coordinate their plans and activities in the Red Rock area.

(4) Public Recreation Facilities

Over the years, numerous small public recreation developments have been constructed in the Red Rock Canyon Recreation Lands. Table 15, page II-51 displays the type of developments presently existing with all proposed areas also listed at the various recreation sites as well as the major transportation corridors within the Red Rocks.

(5) Waste Disposal

There are approximately 104,000 lbs. of solid waste hauled annually from the Red Rock area to the Blue Diamond pit, 13 miles away. This material is being collected from trails, roads, overlooks, undeveloped campgrounds and picnic areas.

The Blue Diamond pit is not a sanitary landfill. It does not meet the EPA standards for such a site and is contrary to BLM policy. This dump is open and wild burros have been seen eating the uncovered garbage. It is probable that rats and other disease vectors also occur in the dump.

The BLM has installed one set of vault toilets near Willow Springs. The effluent from these vaults is removed by a commercial firm and disposed in the Las Vegas city sewage system.

Waste disposal at Calico Basin and other private lands in or near the Red Rocks area is by septic tanks and commercial pickup.

4. Recreation Opportunities

There are many opportunities available for the leisure pursuit of activities to refresh strength and spirit or seek diversions within the Red Rock Canyon Recreation Lands. Recreation opportunities should be differentiated from recreation developments, as developments are considered a means of enjoying a natural recreation opportunity. Camping, picnicking, hiking, bicycling and horseback riding, for example, are considered as being facilities or uses leading to enjoying one or more opportunities. The opportunities that are naturally available or actively pursued are:

a. Sightseeing

Sightseeing is considered the intentional or inadvertent observation of the land and the attractions and resources thereon. It can be the act of viewing the general landscape or specific sites or attractions such as historical, archaeological, geological, botanical and zoological.

Several interests are included, such as general observation by individual walking or riding through the area, photography by both amateur and professional and serious research or study by individuals and institutions. Those different interests are directed toward the following kinds of attractions in the Red Rock Canyon.

Recreation Lands:

(1) Botanical

Botanical attractions are areas where there are plants or plant communities of special human interest. In addition to area wide wild flowers, cacti, yucca, desert shrubs and other vegetation, there are two botanical areas of specific interest. These are:

Pine Creek Canyon Area--Pine Creek offers an opportunity for public and scientific nature study. The nature study is in the format unique plant communities in association with a live stream. Reference can be made to the Vegetation section, page II-29, for specific species. The uniqueness of this plant community warranted the designation of a 240 acre research natural area on the north fork of Pine Creek. This area is set aside for scientific study. Public nature study activities are pursued in the lower portion of the Pine Creek Canyon.

Lone Pine Area--Lone Pine is an area with an intermingling of four major plant communities found in the Red Rock Canyon Recreation Lands. For specific information on species, see the Vegetation section, page II-30.

(2) Zoological

Zoologic attractions are areas where rare, unusual or high concentrations of animals can be observed with reasonable regularity. There are no areas in the Red Rocks where a concentration of animals can be viewed regularly, but individual species can be seen infrequently. A detailed listing of animal species is found in the Wildlife and Free-roaming Horses and Burros sections, pages II-35 and Appendix #III. The species receiving the most attention by sightseers are Desert bighorn sheep, Desert tortoise, Prairie falcon and wild, free-roaming burros.

(3) Geological

Geologic attractions are any unusual, unique or attractive geological phenomena that have special human value. Geologic sightseeing is considered the major attraction of the Red Rock Canyon Recreation Lands. Features with the highest attraction are the Red Rock escarpment, Calico Hills and the Brownstone Reservoir area.

Picture window Natural Arch and Desert (Hidden) Cave are additional geologic features of importance in the Red Rock area.

(4) Archaeological

Archaeological attractions are any sites or areas where there is evidence of occupation or use by aboriginal people. The big game hunting culture and the Paiute culture are represented in the area and can be studied through pottery, roasting pits, campsites and possibly pit houses.

A detailed account of archaeological values is in the Archaeology section, page II-44.

(5) Historic

Historic attractions are any place associated with a significant event, an important person or a cultural activity of the past. Historic, in most cases, means 50 years or older.

The historic attractions found in the Red Rock Canyon Recreation Lands of local significance are:

Old Spanish Trail--(1829-1848) this trail passes through the area from Blue Diamond to Mountain Springs.

Mormon Trail--this trail is the same as the Old Spanish Trail, but was renamed at a later period.

Capt. John C. Fremont--a renowned explorer of the West, passed through the area on the Old Spanish Trail in 1844.

Spring Mountain Ranch--(1867) this was the first settlement by the white man in the Red Rocks area.

Pine Creek Ranch--(1922) this was also an early homestead. A general discussion on history of the area is found in the History section, page II-46. Sites and trails are shown on map 10, page II-45.

b. Natural Environment

A considerable area of the Red Rocks is in a condition unaffected by man-made intrusions. Enjoyment of an area in its natural state is one of the opportunities found at Red Rock Canyon Recreation Lands.

See the later Primitive and Natural Environmental Values section, page II-67, for details.

c. Hunting

There are eight species of wildlife that can be legally hunted in the area: deer, elk, bighorn sheep, mountain lion, coyote, rabbits, quail or dove. Hunting has been restricted by a county ordinance prohibiting use of firearms below the 5,000 foot contour on the east side of Red Rock Canyon Recreation Lands.

d. ORV

Off-road vehicle use is restricted to the Brownstone Road. This allows normal vehicle travel on paved and Red Rock Summit roads. Ten miles of existing roads formerly used by ORVs have been posted as closed to travel to preserve the unaltered desert environment.

e. Bicycling

Use by non-motorized cycles is limited to the paved access routes. The county has proposed constructing a bicycle path along Charleston Boulevard to Calico Basin.

f. Collecting

Items collected in the area for hobby purposes are:

(1) Petrified wood (see Minerals Section, page II-14).

(2) Trilobite fossils (invertebrate) in La Madre Mountains, which are not covered by the National Antiquities Act.

(3) Pinyon nuts.

(4) Cholla cactus skeletons.

(5) Colorful but ordinary rocks.

g. Mountaineering

Individuals who technically climb mountains for sport have identified at least 120 different routes in the area. The quality of a climb is rated by its technical difficulty and natural surroundings. Mt. Wilson and Ice Box Canyon have a majority of these 120 routes.

h. Caving

Only one cave, called the Desert Cave or Hidden Cave, has been found in the Red Rock area. This cave has been vandalized by removal or destruction of stalactites and stalagmites. The cave was sealed with concrete in 1972 to prevent further vandalism but vandals have still managed to tunnel into the cave several times.

i. Other

Estimates of recreation use at public recreation developments are found in the next section. Unfortunately, there is no accurate estimate of visitation for the opportunities found in the Red Rock Canyon Recreation Lands.

5. Recreation Use

Various estimates of the total numbers of recreational visits to the Red Rock Canyon Recreation Lands have been made over the years. In the master plan for the Red Rock Canyon Recreation Lands written in 1968, annual visitation to the area was estimated at 192,000 visits.

A BLM study (Owings, 1969) estimated total annual visits for 1969 at 466,136. An estimate for 1972 established at 600,000 visits. This estimate was based on a projection of the 1969 estimate. However, it has been discovered that this data was lacking in statistical reliability. New and more reliable data is now available, but, is still, unfortunately, incomplete and subject to interpretation. To fill the need for some kind of estimate of visitor use, daily traffic counter data was used and is outlined below.

Bureau of Land Management traffic counts from May 1973 to April 1974 on the Red Rock Scenic Road, just to the north of the Blue Diamond Loop Road, showed that an average of 225 vehicles per day passed by the traffic counting point. This traffic volume is assumed to be roughly equivalent to that occurring in calendar year 1973. State of Nevada Highway Department traffic counts taken at a point between the Red Rock Scenic Road's intersection with the Blue Diamond Loop Road and the Red Rock Canyon Recreation Lands Dedication Site, indicate a daily average of 460 vehicles passing the counting location for calendar year 1973. In both of the above cases, the counts reflect two way traffic at the count location. Approximate numbers of vehicles going in a single direction, assumed to be entering the area, are obtained by dividing 225 and 460 by two. Thus figures of 113 and 230 vehicles entering the Red Rocks each day are produced. No dependable traffic count information for traffic entering the Red Rocks from the south end of the Blue Diamond Loop Road is available. For the purpose of this estimation, this number is assumed to be equal to the number of vehicles above that were included in both the Red Rock Scenic Drive and northern Blue Diamond Loop Road counts. Summing the 113 and 230 vehicles per day, a total of 343 vehicles on an average day in 1973 entered the Red Rocks. It must be noted that the 343 vehicle figure is not comparable with the 1,165 vehicle figure used in the Air and Air Quality Section on page II-4 because the latter represents two way traffic and includes a great deal of non-recreation related vehicle use on the Mountain Springs Summit Road.

Of the 343 daily vehicles, an estimated 75 per cent were assumed to engage in some sort of recreational activity. This means the annual number of vehicles entering the Red Rocks for recreational purposes is estimated as follows: 343 vehicles times 365 days in a year times 75 per cent equals approximately 94,000 vehicles entering the Red Rocks in 1973 for recreational purposes.

A BLM study (Owings, 1970) estimated the average vehicle visiting the Red Rocks contained approximately four persons. While this figure is considered to be high, it can still be used to roughly estimate the number of visits to the Red Rocks by multiplying it times the number of vehicles entering the area. This means an estimate of 376,000 recreational visits were made to the Red Rock Canyon Recreation Lands during 1973. This figure theoretically includes visits to the Bonnie Springs development as it existed in 1973.

For purposes of comparison, 1973 visitation to the U.S. Forest Service's Mount Charleston recreation complex has been estimated by Forest Service officials at 1,000,000 visits.

In the 1969 study, BLM personnel interviewed people at Willow Springs to find out what features of the Red Rocks area they find attractive. The following table (table 16, page II-58) is a summary of the responses.

The 1969 study revealed that less than two per cent of Red Rock visitors were camping in the area. However, 13 per cent indicated a desire to see additional campsites. The lack of interest in overnight camping is attributed to the lack of facilities, the climate, the availability of water, and the proximity to Las Vegas.

The use in the Red Rocks is overwhelmingly of the day use variety. The 1969 study showed more than 55 per cent of the visitors to the Red Rocks participated in picnicking. The study also indicated 78 per cent of those interviewed stayed four hours or less.

TABLE 16
Attractive Features
Public Response
1969

Scenery	43.3%
Rocks	36.6%
Mountains	23.3%
Not Crowded	23.3%
History	16.6%
Desert	16.6%
Cool	10.0%
Trees	10.0%
Flowers	3.3%

6. Management

The present recreation responsibilities of the Red Rock Canyon Recreation Lands are handled under a cooperative agreement between the BLM and the Nevada State Park System (see Appendix II). The Park System manages Sandstone Quarry, White Rock Spring, Red Springs, and the Brownstone area in addition to the 80 acres owned by the Park System in Pine Creek and the recently purchased Spring Mountain Ranch. The Park System area of responsibility is essentially to the north and east of the Segment A portion of the Red Rock Scenic Drive.

Sandstone Quarry, White Rock Spring, Red Spring, and Pine Creek are being managed by the Park System as essentially day use areas. The Park System has opened the Spring Mountain Ranch to public use on a regular basis each weekend.

The Park System patrols its area of management in three shifts until 10:30 p.m.

The current BLM patrol schedule is in two shifts from 9:30 a.m. until midnight.

However, the coverage and duration of BLM patrols vary with the season and the types of activities. Daytime patrols cover the entire Red Rocks area at least once with usually one ranger per vehicle. These patrols and their timing has proven to be a great deterrent to some types of activities and people that could create problems and vandalism. A limiting factor to the effectiveness of the BLM rangers is their lack of authority to issue citations or make arrests.

An effective program of public relations and a cooperation between the BLM rangers, State Park Rangers, and the park visitors has also helped to cut down on illegal activities.

Even under an effective management program, there is a small number of people for unknown reasons destroy rather than protect things. Such people have been active in the Red Rocks and a great deal of damage has been done, in some cases to irreplaceable resources. Littering and painting graffiti on rocks are the most obvious activities of this sort.

Other forms of vandalism also are a constant problem in the area. The destruction of the formations in Desert Cave previously discussed and the cutting of live trees and shrubs for firewood are examples. Other examples include the destruction of petroglyphs and pictographs by painting over them, use of these historic drawings as pistol targets, and their destruction during attempts at removal. In addition, plants are collected for private use and crushed under feet and tires. Also a number of wild fires in the area are attributable to the carelessness of people. Wildlife is harassed and the rare Desert tortoises collected as pets. The use of off-road vehicles off designated roads continues although it is not authorized. This not only disrupts untouched soils and destroys vegetation, but also provides a trail that can be followed by others afterward.

The most recent act of vandalism occurred in early July, 1974, when the well head of the Willow Spring Well was torn off and the well casing plugged with rocks.

Trash collection and removal is performed twice weekly by BLM personnel and daily by Park System personnel. Litter cleanups occur periodically and have been done in the past by the Boy Scouts, Girl Scouts and numerous private organizations. Many of these cleanups have been part of Earth Week activities or through the U.S. Dept. of Interior's Johnny Horizon program.

Other management activities in the Red Rocks include wild fire control and suppression, search and rescue operations (three in 1973) and general informational services.

7. Cultural Values

The Las Vegas area like any large metropolitan area has a diversity of religious and ethnic groups. There do not appear to be any places, areas, structures or objects within the Red Rocks used or valued as a part of the ethnic styles or religious beliefs of any of these groups.

8. Political - Type of Government

The Red Rock area is located entirely within Clark County. Clark County encompasses 7,927 square miles and had a 1970 population of 273,000. There is no political subdivision of government below the county level that exercises land use controls. The Clark County government, headquartered in Las Vegas, is under the direction of the Board of County Commissioners. The seven man board exercises legislative power through adoption of ordinances, resolutions and orders and also hears and decides appeals.

Administrative power is exercised through the county administrator. The county administrator acts as chief administrative officer of the county in coordinating, directing and supervising the work of the county departments and agencies. The administrator also acts as advisor to the board on problems affecting county departments and coordinating the legislative efforts of the county.

Functions of the county government include judicial, institutional youth service, parks and recreation, public safety and public works. (Budget, Statistical and Staffing Report 1971-1972, Clark County, State of Nevada.)

In addition to county government, Federal and State agencies also exercise varying types of control over the area. The U.S. Bureau of Land Management presently has jurisdiction of the lands in the area. The Nevada Department of Fish and Game manages the game animals in the area and the Nevada State Park System owns and administers the Spring Mountain and Pine Creek Ranches. Also, a cooperative agreement between the BLM and the Park System was amended in 1973 to allow the Park System to administer the recreation responsibilities of the area north of the road known as Segment "A" and the Calico Basin vicinity.

9. Planning

The Clark County Planning Department has planning responsibility for the lands adjacent to the Red Rock area. The department prepares general maps and plans, assists in drafting zoning ordinances to guide the orderly growth and development ~~of~~ the county, regulated land use and subdivision design, and participates in the activities of the Regional Planning Council which develops the area wide master plan.

The Regional Planning Council provides an overall approach to planning for orderly growth and development of the area. In addition to developing the area wide master plan, the council reviews all requests for Federal funding for urban planning and development. The county, cities, school district and water district are participating members of the Council. (Budget, Statistical and Staffing Report 1971-1972, Clark County, State of Nevada). The present county master plan encompasses only a portion of Las Vegas Valley and does not cover the Red Rock area.

10. Zoning

Title 29 of the County Statutes provides for zoning of lands in Clark County. The general purpose of the zoning ordinance is for "...promoting the health, safety, morals, and general welfare of the present and future inhabitants of Clark County and divides the county into districts and sets forth the regulations pertaining to such districts in accordance with the General Plan for Clark County..." (Section 29.01.020, County Statutes.)

The Red Rock area lies within the R-U Rural Open Land District. "The Rural Open Land District is established for the vast areas of open land and to provide for a very low density residential use." (Section 20.06.010, County Statutes.) This type of zoning is the least restrictive and can be termed a "holding" zoning until such time as a higher use is identified. The latest zoning ordinance adopted by the county is termed "Open Spaces" and is more restrictive on development than the Rural Open Land ordinance. How zoning affects the adjacent private lands as well as the private holdings in the Red Rocks could affect the total area.

A number of other types of ordinances, codes and regulations could affect management and development in the Red Rocks. A few of these would include zoning and subdivision ordinances, sewage and solid waste disposal, air and water quality regulations and building electrical and plumbing codes.

11. Social and Economic Interests and Values

Clark County is the most populated county in Nevada and one of the fastest growing regions in the nation. Evidence of phenomenal growth in population is seen in recent census data: from 1940 to 1960, county population as a percentage of state population increased from 15 to 45 per cent; from 1950 to 1960 population increased 165 per cent; from 1960 to 1970 population increased 115 per cent to a total county population of more than 273,000 people in 1970.

Based on these figures, there is little reason to believe population will level off or decline in the next few decades. Immigration rather than natural increase has accounted for 75 per cent of the recent population rise, and as long as this type of growth is supported by an expanding employment base, Clark County should continue to grow.

Most of this tremendous growth is due to the large volume of tourists visiting the area each year, linked principally to a growing population in southern California. Clark County recorded 14 million tourists in 1967 and more than 22 million in 1970. All evidence indicates tourism will continue to support expansion in accommodations food, gasoline and related services.

While most tourism is urban oriented, a part of tourist accommodations and attractions are outdoor recreation sites. The attractiveness of outdoor recreation areas to the out-of-state visitor is evident in the Red Rock Canyon where 30 per cent of those polled in the 1969 BLM study were from other states besides Nevada. A historical profile of Clark County's population is displayed in table 17, page II-62. A significant fact not noted in the table is that the city of Las Vegas absorbed most of this growth until 1960; however, during the 1960's a relatively larger share of the population increase took place in surrounding areas of the county. Clark County has also been increasing its population at a relatively greater rate than other areas of Nevada, as indicated in table 18, page II-62.

TABLE 17

Population of Clark County, Nevada - 1910-2000:

Year	Population	
1910	3,321	
1920	4,859	
1930	8,532	
1940	16,414	
1950	48,289	
1960	127,016	
1970	273,288	
2000	1,000,000	(High estimate - Environmental Assessment Pollution Abatement Project Las Vegas Wash and Bay, August 1, 1972)

Source: U.S. Census of Population

TABLE 18

Clark County Population as a Per cent of Nevada's Population, 1940-1970

Year	Percent
1940	15
1950	30
1960	45
1970	56

Source: U.S. Census of Population

The relatively high population density of Los Angeles and its environs and related urban and environmental problems have placed considerable pressure, in recent years, on the California desert areas as a source of outdoor recreation experiences. These same urban problems have caused many older people to seek retirement living space outside of the Los Angeles area. The Red Rocks area is on the fringe of the desert recreation activity and is just being found by many of these kinds of users.

The BLM's California Desert Plan is a critical interim management plan which closes some areas of the California desert to ORV use. It may cause many of the outdoor recreationists in southern California to seek the recreational opportunities in southern Nevada. The recent energy crisis has caused many people to look closer to home for their vacation spot. Again the Las Vegas area becomes attractive to many because of the variety of entertainment and outdoor activities available there.

The baseline population table, Table 19, page II-63, summarizes the historic and projected population of the primary user areas associated with the Red Rocks. Roughly, the populations of these areas are expected to nearly double by the year 2000 from their 1970 levels.

There is little question that demand for recreational experiences will increase at least as fast as any specified population group, but precisely where this demand will have its impact will depend on development levels, use densities, special features and changing personal tastes regarding alternatives.

TABLE 19
Baseline Population Estimates to Year 2000

Population 1/	1950	1960	1970	1980	1990	2000
So. California 2/	4,762,846	7,445,425	9,512,963	12,081,463	15,428,028	18,621,630
Clark County, Nevada	48,289	127,016	273,288	388,057	423,586	504,914
Arizona Area 3/	365,254	700,168	980,105	1,277,330	1,771,116	1,868,201

1/ Projections beyond 1970 are based on projections prepared for the Water Resources Council.

2/ Includes Los Angeles, Orange, San Bernardino and Ventura Counties.

3/ Includes Mohave, Maricopa, Yauapai Counties

Employment statistics for Clark County exhibit the structural patterns expected from the earlier brief review of its economic history. The employment table, table 20, page II-64, summarizes employment by broad industrial sector for the county and also provides state and national percentage distribution for comparison.

Clark county's 100,000+ employment accounts for more than half the employment for Nevada; therefore, differences of a percentage point or more between county and state employment distributions are relevant. Unemployment in Clark County and Nevada in 1970 was slightly higher than five per cent.

Whereas an average of 25 per cent of the nation's employment is in the manufacturing sector, less than five per cent of Clark County's employees derive their income from this sector. Nearly 40 per cent of Clark County's employment is in the services sector of the economy as compared to the national average of 15 per cent.

The following table, (table 21, page II-64) provides some representtative measures of personal income and income distribution for Clark County compared to Nevada on a statewide basis.

TABLE 20
Employment Clark County by Sector and Comparative State and U. S. Sectoral Distribution, 1970

Industry Sector	Clark County		Comparative Percentage Distribution	
	Number	Per Cent	Nevada	U.S. 1/
Agriculture	904	0.8	2.4	4.6
Mining	449	0.4	1.9	0.8
Construction	9,153	8.5	8.2	4.2
Manufacturing	4,955	4.6	5.2	25.1
Trans., Comm., and Utilities	8,118	7.5	7.8	5.7
Wholesale Trade	2,173	2.0	2.6	19.0
Retail Trade	17,711	16.4	16.5	19.0
Services	42,782	39.7	33.6	14.7
Government and all other	21,505	20.1	21.8	25.9
TOTAL	107,750	100.0	100.0	100.0

Source: 1970 Census of Population

1/ Compiled from Statistical Abstract, 1970.

TABLE 21
Annual Personal Income in Clark County and Comparative State Totals - 1970

Item	Clark County	Nevada
Personal Income (Dollars)		
Total (000)	969,079	1,744,795
Per capita	3,546	3,570
Percent of Families With Less than $5,000	14.4	14.8
Percent of Families with Over $12,000	42.6	41.3
Median Family Income (Dollars)	10,870	10,692
Poverty Level Income:		
Number of Families Below	4,827	8,641
Income of Poverty Families	1,755	1,778

Source: 1970 Census of Population

12. Aesthetics

a. Visual

Natural beauty results from an interesting and homogeneous variety of line, form, color and texture, Red Rocks has a superb combination of these factors. Line is dramatically portrayed in the horizontal (flat) valley floor versus the vertical sheer cliff formations. Likewise, the lack of form on the valley floor tends to magnify the visual impact of the wedge shaped canyons and at the higher elevations the rounded forms of the sandstone formations.

The multi-colored bands in the cliffs contrast with the gray-greens on the valley floor, the green belt along the stream beds and the pine forests on the north slopes at the higher elevations. The contrasting textures created by the desert vegetation in the valley, the talus slopes, the undulant sandstone formation and the change in soil texture and vegetation gives excellent variety to this scenic component.

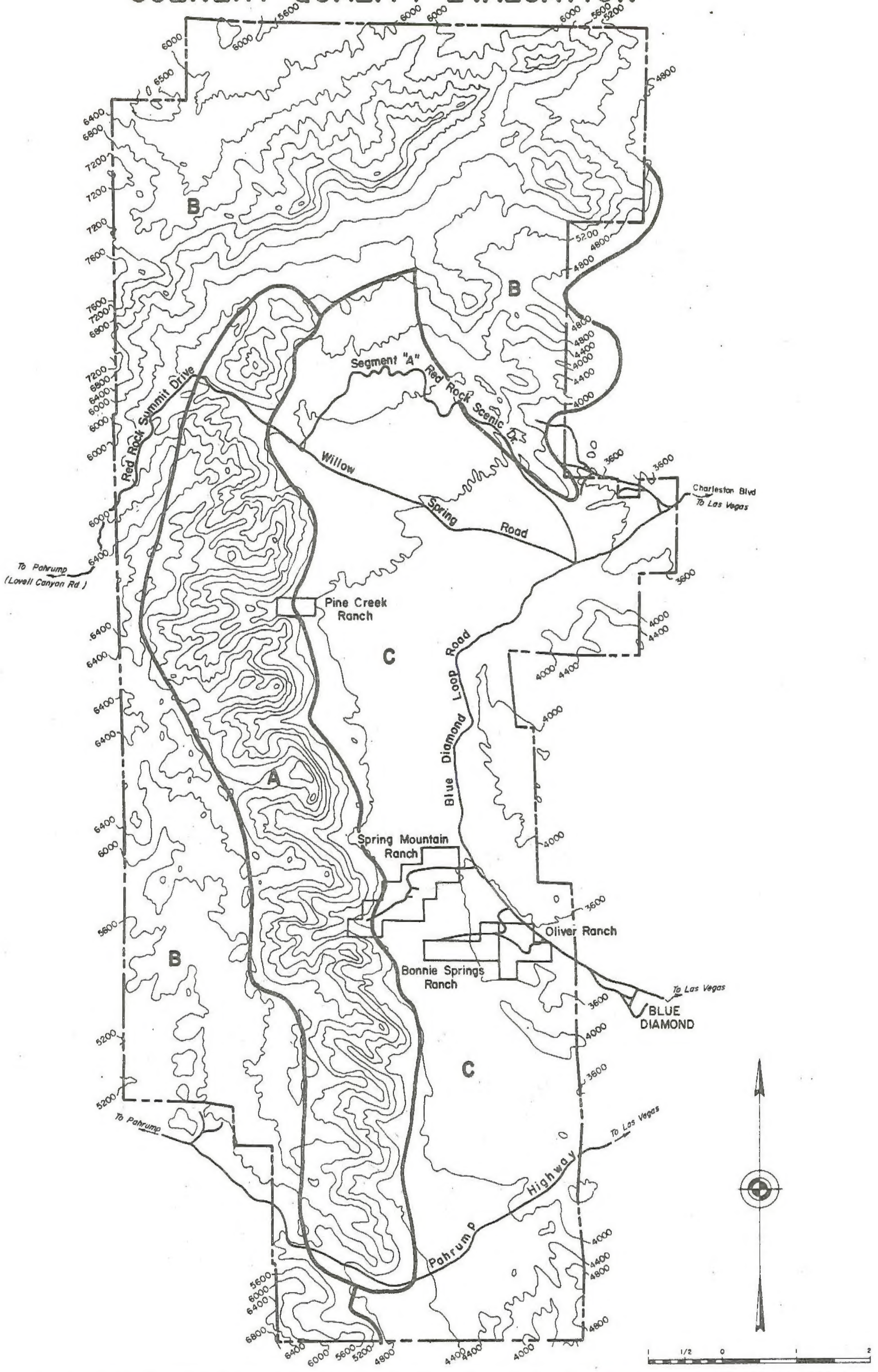
Viewing the area from the valley floor, the eye is attracted to the sudden thrust of the red shaded rock through the desert floor. The formations rise 3000 feet above the viewer and the setting against the deep blue sky makes an awe-inspiring sight. From the upper edge of the escarpment, the rugged beauty of the Red Rock escarpment can be seen. Also, the viewer has a panoramic view of the desert floor and of Las Vegas in the distance. A night view of Las Vegas is very enchanting. In terms of offering a variety of inspiring visual experiences, Red Rocks is one of the outstanding scenic areas in Nevada.

Using the BLM's quality evaluation rating system, the area was rated for scenic beauty (see map 11, page II 66). An "A" rating indicates area having outstanding scenic value, a "B" rating is moderate and a "C" rating indicates low scenic values.

Existing intrusions upon the scenery are the roads within the area, especially the newly constructed Segment A of the Red Rock Scenic Drive. The large cuts and fills made during construction of this road are still quite fresh and stand out in sharp contrast to the rest of the area. It is especially noticeable when viewed from the escarpment. Eventually these scars will age and darken and become less noticeable but it will be many years before they are revegetated and blend completely with the landscape.

The unpaved roads also affect the scenery by providing a dust plume across the landscape every time a vehicle uses them. Whether these roads detract from the visual beauty is a matter of opinion. Some people feel they do, but others feel they add to the feeling of openness.

SCENERY QUALITY EVALUATION



A-QUALITY OF AREA
SCALE A, B, C

MAP 11

b. Noise and Odor

The noise level in the Red Rocks area is relatively low compared to downtown Las Vegas. There is a certain amount of noise created by vehicular traffic along the road corridors within the area. Airplanes leaving and arriving in Las Vegas also frequently pass over the Red Rocks and create some noise. In addition, the operator at Bonnie Springs private recreation area offers scenic helicopter rides for a fee. There are no offensive odors in the immediate area. Vehicle exhausts may temporarily taint the picnic site areas especially when they are crowded, but this odor dissipates in a short time. After rains many of the plants give off odors, but this is not generally considered to be unpleasant.

13. Primitive and Natural Environmental Values

The Red Rock Canyon Recreation Lands is predominantly composed of lands that could be termed "natural environmental area". For an area to be considered as a natural environmental area, it must meet the following criteria established by the BLM: it must be undeveloped, natural, wild and essentially removed from the effects of existing developments. A half mile limit is used as a buffer to exclude noise impacts. The visible or "seen zone" falling within one mile of developments is also excluded. Existing scars are included if they could be rehabilitated so the effects of the development would be obliterated within 20 years.

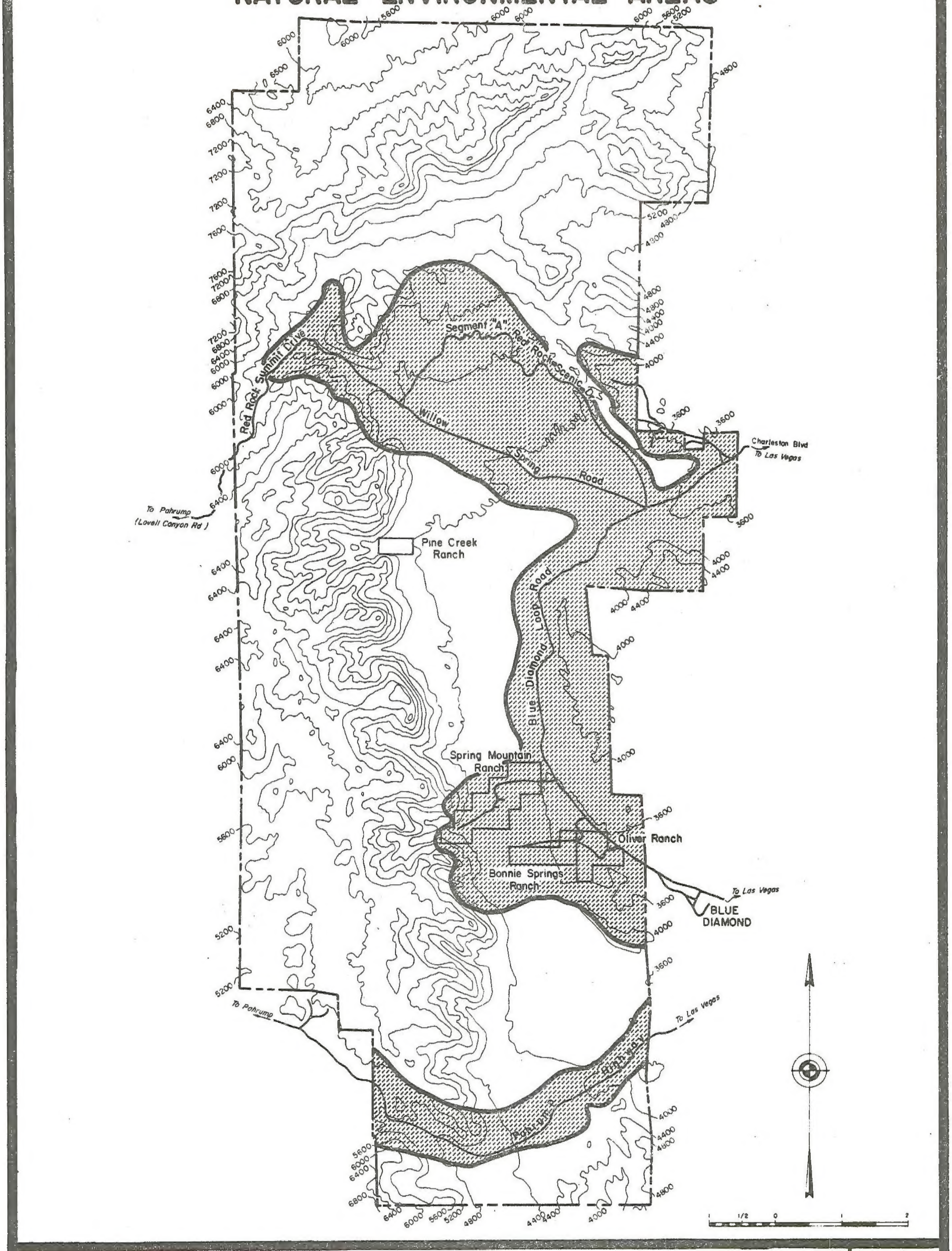
This is a matter of judgment, but the purpose of such subjective criteria is to identify the maximum acreage that could be maintained in a near natural condition. Under this definition and criteria, a natural environmental area that could, under ideal conditions, qualify as a BLM primitive area. The maximum natural environmental area encompasses about 44,000 acres or 70 per cent of the public land within the Red Rocks (see map 12, page II-68.

The natural environmental area should not be confused with the wild area as discussed in the description of the proposed action. The wild area reflects the same general types of values but is modified or restricted by the proposed action and the master plan.

In addition to analyzing the Red Rocks in terms of the natural environmental area criteria, the BLM primitive evaluation inventory system was also employed. In this system the following criteria are evaluated: scenic quality, wildlife, water usability, size, uniqueness and the extent of man's intrusion. These factors are evaluated together and used to determine the quality ranking of the area being considered.

There are three possible quality rankings in the system, A, B, and C. "A" is the highest. The Primitive Quality Evaluation Map (map 13, page II-69) shows the results of this rating analysis. As indicated on this map, the area above the escarpment and in the La

NATURAL ENVIRONMENTAL AREAS

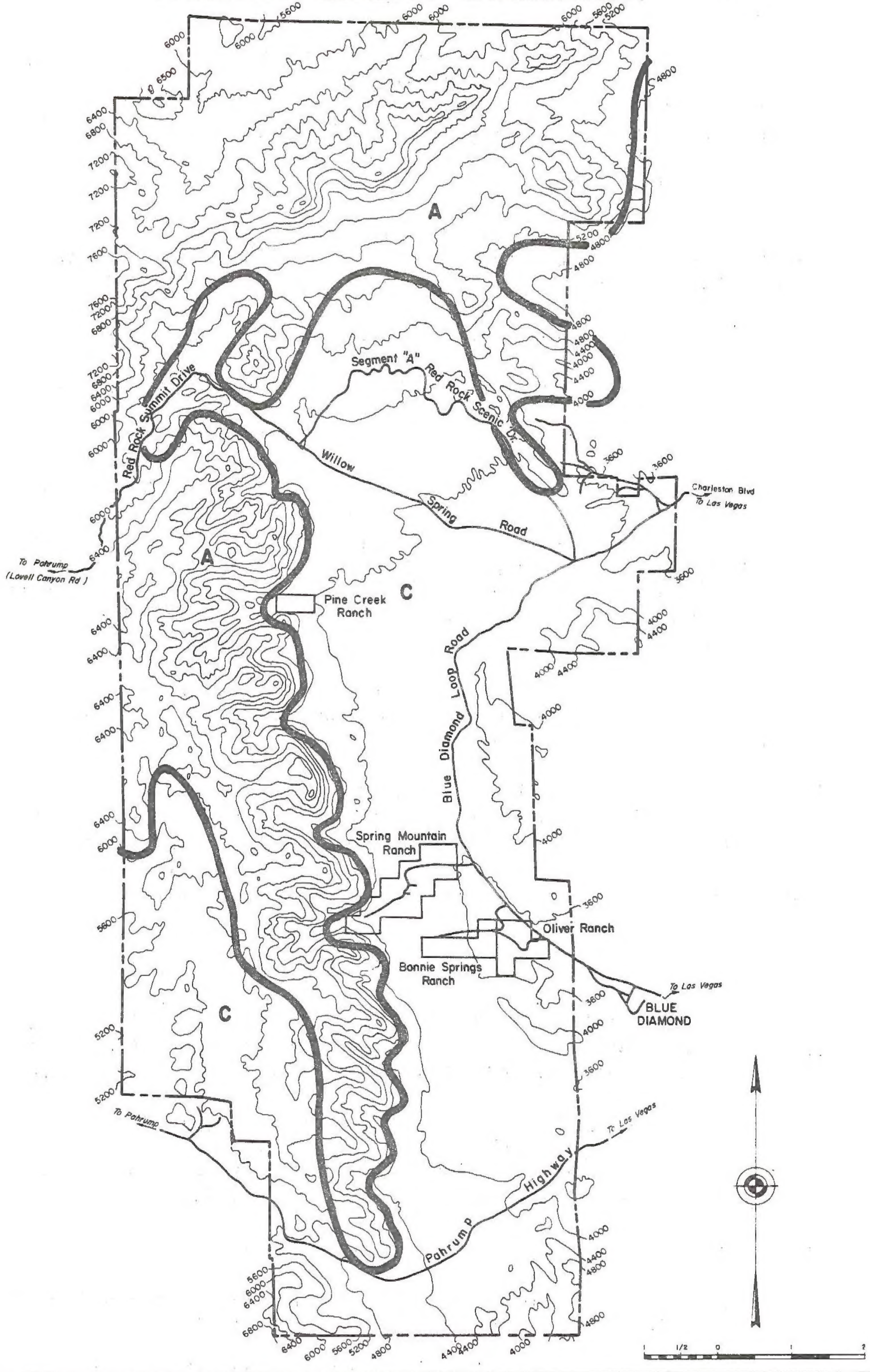


▨ DEVELOPMENT INFLUENCE ZONE

☐ NATURAL ENVIRONMENTAL AREA

MAP
12

PRIMITIVE QUALITY EVALUATION



A-QUALITY OF AREA
SCALE A,B,C

MAP 13

Madre area rank very high in terms of primitive values. The area below the escarpment, while quite scenic, cannot be considered as a potential primitive area because of the large number of existing man-made intrusions. There are no areas identified in the B rating.

14. Hazards

This section summarizes the types of hazards existing within the Red Rocks. To save space, those hazards described in other sections are given only a reference. Hazards in the Red Rocks include:

a. Floods - discussed in Water Section, page II-26.

b. Contaminated Water - discussed in the Water section, page II-23.

c. Vehicles and Roads - a wide variety of road driving conditions are found in Red Rocks with hazards common to conditions in other areas. Dirt and gravel roads are hazardous because bumps and holes may cause a vehicle to go out of control. Loose sand is a trap for all but four-wheel drive vehicles. Paved roads present a different sort of hazard. Higher speeds make car-to-car or car-to-pedestrian or animal collisions more probable. The Red Rock Summit Drive, while not paved, presents this type of hazard because it passes through a campsite where children and pets may be scampering around.

A new hazard has been added to this road as a result of recent rains. The road has been completely washed out at several locations between Willow Springs and Lovell Canyon.

The Segment A road is hazardous in a number of ways. It is paved allowing people to go faster than was designed and posted. It is winding and twisting and has a number of blind curves. Thus far a number of cars have run off the road on these curves and a collision, almost occurred involving two cars on a blind curve. (BLM observation by on-the-ground ranger.)

d. Fire - discussed in the Fire section, page II-27.

e. Firearms - hunting or use of firearms is illegal below 5,000 feet on the east side of the escarpment by Clark County ordinance. However, much target shooting and "plinking" in this area still occurs.

f. Crime - as in any other area where people congregate, there has been some crime within the Red Rocks. This is primarily in the form of petty pilferage and drug use. However, one suicide and a kidnapping that led to a murder occurred in 1974.

g. Venomous animals - see Appendix III

h. Geologic - includes rock falls, earthquakes, etc. discussed in the Topography and Geology sections, pages II-9 and II-10.

i. Poisonous or Dangerous Plants - most of the plants occurring in the Red Rocks are harmless. The cacti and yucca have spines that may cause painful wounds. Some of the locoweeds are poisonous but not likely to be eaten by people. Creosote bush and other aromatic plants such as sagebrush may cause stomach distress if eaten. Poisonous mushrooms may appear after rains. Jimson weed (Datura) with large, extremely attractive white flowers is also quite toxic if eaten.

j. Wild Burros - discussed in the Wild Free-Roaming Horses and Burros section, page II-35.

III. ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

This section will consider the impacts upon the natural and human environment should the proposed action be taken. Such impacts will be discussed as if no mitigating measures could or would be taken. This section is therefore an attempt to describe a "worst possible" situation as far as adverse impacts are concerned. Positive or enhancing impacts will also be discussed in this section.

The impacts that have been identified are the result of super imposing the proposed action upon the existing environment and projecting them into the future. The probable future of the Red Rock area without the proposed action or any action whatsoever is discussed in the "no further action" alternative (Alternative V, p. VIII-41).

A. Climate

The proposal would not affect the climate of the area. The forces determining the climate are generated in the Gulf of Mexico, Pacific Ocean and the North American continent, and are modified by the topography of the southwestern U.S. Any physical change superimposed on the Red Rock area by the proposal would be small in comparison to these forces and would be overridden by them.

B. Air and Air Quality

1. Construction of any sort would impact air quality by increasing the amount of dust and also by increasing the amount of exhaust emissions in the area. The amount of dust produced would be determined by the soil type, dryness of the soil, the amount and strength of winds, the amount of surface disturbed and the length of time it is left unprotected.

The amount of exhaust emissions would depend upon the numbers and types of equipment, the presence or absence of control devices, the length of time they are in operation and the condition of the equipment.

2. Visitor use by automobile would increase the amount of pollutants in the air. The amount of such pollution would depend upon the number of cars, distance of travel, condition of the car and the absence of control devices on the vehicle.

BLM personnel (1974) estimate in 1985 about 2,240 vehicles would use the Red Rocks on an average day. Using the emission rates listed previously (see Air and Air Quality section of existing environment page II-3) the following amounts of air pollutants would be generated by these vehicles:

Type of Emission	Lbs./Vehicle Day	Total Amount Lbs/Day x 2,240 Vehicles
Aldehydes	0.008	15.68
Carbon Monoxide	4.160	9318.40
Hydrocarbons	0.363	813.12
Oxides of Nitrogen	0.202	452.48
Oxides of Sulfur	0.016	35.84
Organic acids	0.007	15.68
Particulates	0.022	49.28

The effects of these pollutants would be determined by the length of time it takes to disperse them and the distribution of the vehicles within the Red Rocks. If the vehicles are evenly distributed in time and space the effects would be negligible due to dispersion.

It is more likely, however, these vehicles would be concentrated in small areas during the daylight hours. In this case significant buildups could occur, especially in camping and picnic sites in canyons where air movements may be slow and dispersion of pollutants difficult.

3. The planned Blue Diamond gypsum mill could affect the air quality by adding new stack and dust emissions to the environment. This in turn may require modification of the proposed action so that facilities are located away from the mill area.

4. Air quality could also be affected by campfires and grills at the developed camping and picnic sites. The extent of this impact is unknown at this time.

5. Air pollution from the Las Vegas Valley could affect the Red Rocks if the winds are from the right direction. The extent of this impact is unknown but would depend upon the concentration of pollutants in the valley, the wind speed and the amount of dilution and dispersion of the pollutants before they reach the Red Rocks. This would have a secondary impact of diminishing the recreational potential of the area.

6. Conversely any new air pollutants generated by the use of the Red Rocks will be added to the overall pollution levels of the airshed that includes the Red Rocks and the Las Vegas metropolitan area.

7. Wildfires could also adversely affect the local air quality. Again the extent of such effects is unknown but will depend upon the size of the fire, the length of time it burns, local weather conditions and to some extent upon the type of vegetation burning. In addition such fires would adversely affect the aesthetics and recreational potential of the area.

8. Dust generated by vehicular travel over gravel, dirt or other unsurfaced roads can be expected. The magnitude of this problem will be determined by the soil type and dryness, the number of vehicles, the number of roads, their length and the wind velocity at the time.

9. A secondary impact of air pollutants could be their effects upon vegetation. Fisher (1973) has indicated the death of desert holly and other plants in Death Valley may be attributed to decreased drought resistance brought on by air pollutants, especially ozone.

C. Topography

The proposal would affect the topography of the area on a limited scale. The environmental impact would result from road and trail construction, construction of the Visitor Center and campgrounds.

Road construction would impact natural drainage patterns and land forms. Construction of the Visitor Center, campgrounds, etc., and associated cuts and fills would cause the same impacts on topography as road construction.

The proposed Red Rock Scenic Drive Segment B, for example, would affect approximately 48 acres of land. Several cuts and fills are also expected. The largest cut would be 15 feet deep and 1,400 feet long. The largest fill would be 7 feet deep and 150 feet long. The Crestline Scenic Drive is not expected to require any large cuts and fills between Mountain Springs and Rams-Head, but a number of large cuts and fills are anticipated between Rams-Head and La Madre Canyon because of the rugged, steep terrain.

D. Geology

The proposal would not affect the large scale geology of the Red Rock area. Any activities associated with the proposal would not be of the type or scope necessary to cause tectonic (deep beneath the earth's surface) activity. The forces controlling the geology are of a regional nature and would be unaffected by small scale local activities.

On another level, however, the geology could be adversely affected in terms of its natural features. Vandalism such as rock painting and graffiti could diminish these aspects. Such disfigurement has already occurred at several sites, notably Red Springs and Sandstone Quarry. Vandalism of Desert (Hidden) Cave, described previously, can also be expected to continue. Such vandalism while leveled against geologic formations is felt largely in the realm of aesthetics.

The hazards of rock falls could be increased significantly through the presence of more people in the area. The rate of such falls will presumably remain relatively constant but larger numbers of people make a rock fall accident more likely. People climbing on the rocks may dislodge loose stones which could then tumble down the slope and hit someone. Construction in rockfall areas may increase this hazard by loosening material or by attracting more people into a hazard area.

E. Minerals

1. Locatable Minerals

a. The most significant impact upon locatable minerals has already occurred, that is, the segregation of the area from the general mining laws. This segregation will prevent the future exploration of the area for minerals or their development except on already existing mining claims.

b. Exploration for minerals on the existing mining claims could lead to new roads in the area, exploration holes and disturbed land.

c. The examination by BLM of the existing mining claims for the existence of a valuable deposit of minerals could lead to the invalidation and inactivation of those claims not having such a discovery and the creation of new private lands within the Red Rocks through the patenting of those claims that do possess a valuable deposit of minerals.

d. Mining activity and excavation could present additional hazards to other users of the area and also interfere with traffic.

2. Oil and Gas

a. The proposed action could limit or curtail the leasing of oil and gas rights in the area. Such leasing is discretionary on the part of the BLM and could be judged as incompatible with a recreation area.

b. If the leasing were allowed, exploration could result in new roads in the area. These would affect the soils, vegetation and air quality.

c. Any production could result in pipelines, pumps and other oil field structures. These would affect soils, vegetation and aesthetics.

d. Production would supply extra petroleum, playing a part in easing the energy problem and providing royalties to the U. S.

e. Curtailment of leasing would cause the loss of potential rental fees of 50 cents per acre to the U.S. In addition any potential royalties to the U.S. from any oil and gas discovered would be foregone.

f. Leasing would result in increased hazards to other users in terms of moving equipment.

3. Sand and Gravel

a. The proposed action could preclude the exploitation of the sand and gravel resources in the Red Rock area. These minerals are sold but such sales are discretionary on the part of the BLM. Presently there are sufficient quantities of these materials outside of the Red Rocks but supplies will be tighter in the future as building continues and these outside sources are depleted. This in the long term future could increase the pressures for exploitation of the Red Rock deposits.

b. Exploitation of the sand and gravel deposits would result in new roads, soil disturbance, vegetation removal, and the pit itself which could be aesthetically undesirable unless well hidden.

c. Such activity could lead to increased hazards to other users through truck traffic and the pit itself.

4. Blue Diamond Gypsum Mill Expansion

a. The planned expansion of the Blue Diamond Gypsum Mill would be visible from the proposed administrative site and from the Red Rock Scenic Drive area.

b. The planned mill could also cause a decline in the air quality through stack and dust emissions.

c. The use of the Blue Diamond Road for transport of materials could present an additional hazard to other users of the area.

5. Mineral Collecting

The collection of minerals such as petrified wood and fossils could lead to their depletion, along with soil disturbance by diggings or cuts and scars on rock faces.

F. Soils and Watershed

The impacts of the proposed action upon the soils can be divided into two classes. The first is disturbance as a result of construction; the second is disturbance by visitor use.

The following construction activities on N.R.L. in the Red Rock area would directly affect at least 362 acres. This figure can be broken down by project as follows:

Red Rock Scenic Drive Segment B (including vistas)		48 acres
Crestline Scenic Drive	Approximately	87 acres
Visitor Center	Approximately	11 acres
Blue Diamond Administrative Site	Approximately	4 acres

For the various camping and picnicking sites the estimated acreages that would be disturbed are as follows:

Willow Spring (Rocky Gap) Picnic Site	14 acres
Willow Spring (Rocky Gap) campsite	7 acres
Ash Spring	18 acres
Sandstone Quarry	24 acres
Red Springs	24 acres
White Rock Spring	4 acres
Lost Creek	13 acres
Ice Box Canyon	15 acres
Pine Creek	25 acres
Oak Creek	16 acres
La Madre Canyon	29 acres
Rams-Head	25 acres

In addition to the above total, there would be a disturbance caused by trails, additional vistas and the sanitary landfill.

The acreage figures listed were calculated using the standards set forth by the U. S. Bureau of Outdoor Recreation (1967) as follows:

Group Picnicking or Camping sites	25 units/2 acres
Low (primitive) density camping or picnic sites	3 units/acre
Moderate density camping or picnic sites	4 units/acre
High density camping or picnic sites	4-8 units/acre

Visitor use, after construction, and over extended periods of time could have a harmful effect on the soil at developed sites. These impacts would include soil disruption, soil compaction and increased soil erosion by wind and water due to the effect of human feet and to a lesser extent by vehicle tires.

How great this impact will be is unknown as is the area that would be affected. The damage done will be determined by the number of people that use the site, how much they walk around and how careful they are while parking or driving their vehicles. The area affected would be determined by how far people will walk away from their camp or picnic site. In all probability this would be less than a half mile.

The road and trail construction, construction of the Visitor Center, campgrounds and the added activity by people in the area around the proposed and existing developments will affect the watershed east of the Red Rock escarpment.

A direct increase in surface runoff from developed areas would result. Paved or hard surfaced areas would increase runoff within a close proximity of the roads, trails and other facility sites with an associated increase in soil erosion.

Approximately 38 acres would be paved east of the escarpment under the proposed action. The Segment B portion of the Red Rock Scenic Drive makes up a significant portion of this figure with its proposed vistas and overlooks for an estimated total of 30 acres to be paved.

Along the road rights-of-way the vegetation would be removed and the disturbed areas would be made virtually impermeable. Road construction would also concentrate natural drainage patterns, in some cases causing increased peaks and volumes of flow.

Soil compaction during the construction of these facilities may make lawns, gardens and plantings difficult to establish should such plantings be desired because of poor seedling emergence and plant survival.

Construction of the Visitor Center, campgrounds, etc., would cause identical impacts as road construction, although less of the land areas in the watershed would be affected. The proposed Pine Creek picnic site could contribute runoff and sediment to the critical erosion area identified near the site.

West of the escarpment the construction of roads and trails and the associated increase in people would have a high impact on the watershed. The proposed Crestline Scenic Drive would cross rugged steep terrain. The disturbed areas with large cut slopes in rock would be difficult to revegetate resulting in increased runoff and sediment load. Hard surfacing of roads and trails would concentrate natural drainage patterns and cause increased peaks and volumes of flow down steep slopes to the valley floor below. The proposed Crestline Drive involves approximately 40 acres of paving.

G. Water

Since well water is proposed as the source of potable water at the various proposed development sites a number of impacts could occur. These include: Wells near the springs may affect the springs rates of flow or cause them to cease flowing by diversion of ground water to the wells. It could deplete a portion of the recharge supply of the Las Vegas Valley aquifer. Under the proposed action some 46 acre feet per year would be withdrawn (which if spilled on the ground at one time would submerge 46 acres of level land to a depth of one foot) including the water used by the proposed flush toilets. This is a rather small part of the 75,000 acre feet per year pumped from the Las Vegas aquifer, but in a water-shortage area even such a small depletion should be considered. As previously indicated, the Las Vegas area has been a water deficit area since 1960.

The use of the springs themselves as sources of water would have its own impacts. These include:

1. The water as it occurs is unsafe due to a number of contaminants. Use without treatment would be a health hazard. Treatment would entail costly equipment and maintenance in order to ensure safety.

2. Use of the water will decrease the amount available to wildlife and vegetation.

Another impact upon water, especially ground water, of the proposed action would be the effect of flush toilets and septic tanks, sanitary land fills and other waste disposal methods.

As previously indicated the aquifer near the canyons may be quite shallow and limited. Pollutants leached from septic tanks or land fills may seep down into the ground water and contaminate it. This would probably be local in nature due to the self-cleaning abilities of water moving through or over sand and gravel. It is doubtful it would have a noticeable effect upon the Las Vegas water supply but it could contaminate nearby wells and make the water unuseable.

The proposed action will also have impacts upon safety in terms of increased flash flood danger. There are frequent flash floods within the narrow canyons in the Red Rocks. These floods generally occur during high intensity, short duration thunderstorms. The resulting flood has a very high rate of flow sustained for a very short time. The danger is greatest to persons hiking in the steep walled, narrow canyons. There is a certain amount of danger at the recreation sites located on alluvial fans at the mouth of the canyons such as the Willow Spring (Rocky Gap) Pine Creek and other sites. The flooding occurring at these sites is more likely to cause property damage to parked vehicles, trailers and recreation facilities than to inflict personal injury.

Hazard will be added to some extent by the increased runoff from developed areas and roads. At least 362 acres of land would be constructed on and rainwater would runoff of these areas as though they were solid rock. This additional water would be rapidly dumped into the nearest wash and thereby add to its flood crest. Whether this runoff would be any more rapid than if the areas were undisturbed or if this runoff would significantly affect the flood crests is unknown.

There are no plans for flood control under the proposed action. Such controls, while eliminating one set of impacts would introduce another, namely the effects of construction of channels, holding basins, etc. upon the environment.

H. Fire

Large numbers of people coming into the area could increase the danger of wildfires. As indicated, four of the fourteen fires reported in the Red Rocks since 1970 are known to be man-caused. It is probable that some or all of the fires reported as "cause unknown" were also man-caused.

An increase in the number of wildfires would have the following impacts:

1. Destruction of vegetation.
2. Increased soil erosion on burned-over land.
3. A change in the vegetation due to replacement of burned species by others.
4. Increased fire hazard to visitors and users.
5. Increased cost to BLM for firefighting.
6. Increased fire hazard to firefighters and increased accident hazards during firefighting.
7. Aesthetic degradation by fire scars.
8. Increased air pollution by wildfire smoke.
9. Loss of facilities and property by fire.

I. Vegetation

In many respects the impacts of the proposed action on vegetation parallel those on soils. Approximately 362 acres would be disturbed by construction (see page III-5 for breakdown) with attendant plant destruction.

Damage to plants within an influence zone of the developments (about a half mile) could occur through trampling, collection for gardens, cutting for firewood, vandalism and wildfire. Since many of these plants are slow growing and exist in a stress environment, natural replacement of damaged, destroyed or removed plants would be a long-term proposition. The aesthetics of these zones would be degraded until such replacement occurs.

Increased air pollution from vehicle emissions especially in the canyons could adversely affect plants by weakening them sufficiently so that they can no longer survive the rigors of their environment. This impact is discussed more fully in the Air and Air Quality impact section of this statement, page III-1.

The potential effects of water removal especially from the springs, creeks, and larger dry washes include diminishment, or destruction of the riparian and semi-aquatic plants which depend heavily upon the availability of large quantities of surface or ground water.

Rapid removal of large quantities of water by wells may reduce the ground water level around the wells at a rate exceeding that which the plants can grow roots to follow the water down to greater depths. This would ultimately kill the plants through water deprivation. Decreased spring flow would have the same effect upon those plants requiring surface water.

The plant communities at Pine Creek and Lone Pine are particularly susceptible to damage or destruction because of their unique character. Collection of the endemic plants at Pine Creek could easily deplete them. Since some of them occur nowhere else in the world, they would be irreplaceable.

The less rare plants could presumably be replaced but only by the depletion or partial depletion of the plants in other areas. The sword-ferns at Pine Creek have already been largely depleted by trampling and over-zealous collectors (Vincent, 1974) and the same fate may await others of these unique plants. This could also be true of the Nevada agave, an attractive plant that would fit into any desert landscaping scheme. The roots of these plants grow into crevices in the rocks, however, and a collector would probably break off many plants before getting one with enough roots to survive transplanting.

The plants at Lone Pine could be subjected to similar abuse. The redbuds especially are prone to damage because of their flowers. When they bloom, all of the branches are covered with pink flowers and whole branches may be broken off and used as cut flowers in homes. Trampling and collection may deplete other plants such as columbine.

The picnic grounds and Segment B of the Red Rock Scenic Drive pose great threats to the plants at Pine Creek by inviting large numbers of people into the area.

The construction of the Visitor Center could destroy the stand of Clokey's cholla cactus that has been reported to occur at this site.

J. Wildlife

1. Water

a. Heavily used campgrounds and picnic sites next to springs could discourage wildlife use of these areas.

Developments are proposed for Sandstone Quarry, Oak Creek, Icebox Canyon, Pine Creek, Willow Spring and La Madre Canyon. Intolerant animals may abandon springs because of the noise and constant movement associated with large numbers of people. Heavy use of Red and Calico Springs has already led to a decrease in bighorn sheep use there. More developments at the base of the escarpment would intensify loss of water available to wildlife during the summer, especially if construction of these developments results in loss of cover near the springs. Overnight camping would particularly affect animals that water at night.

More than 2,000 acres of wildlife habitat along the base of the escarpment may be lost if provisions are not made to make some water available to animals (see map 14, page III-11 for affected areas).

b. Trail construction near important waters could discourage wildlife use of these waters. (See map 14).

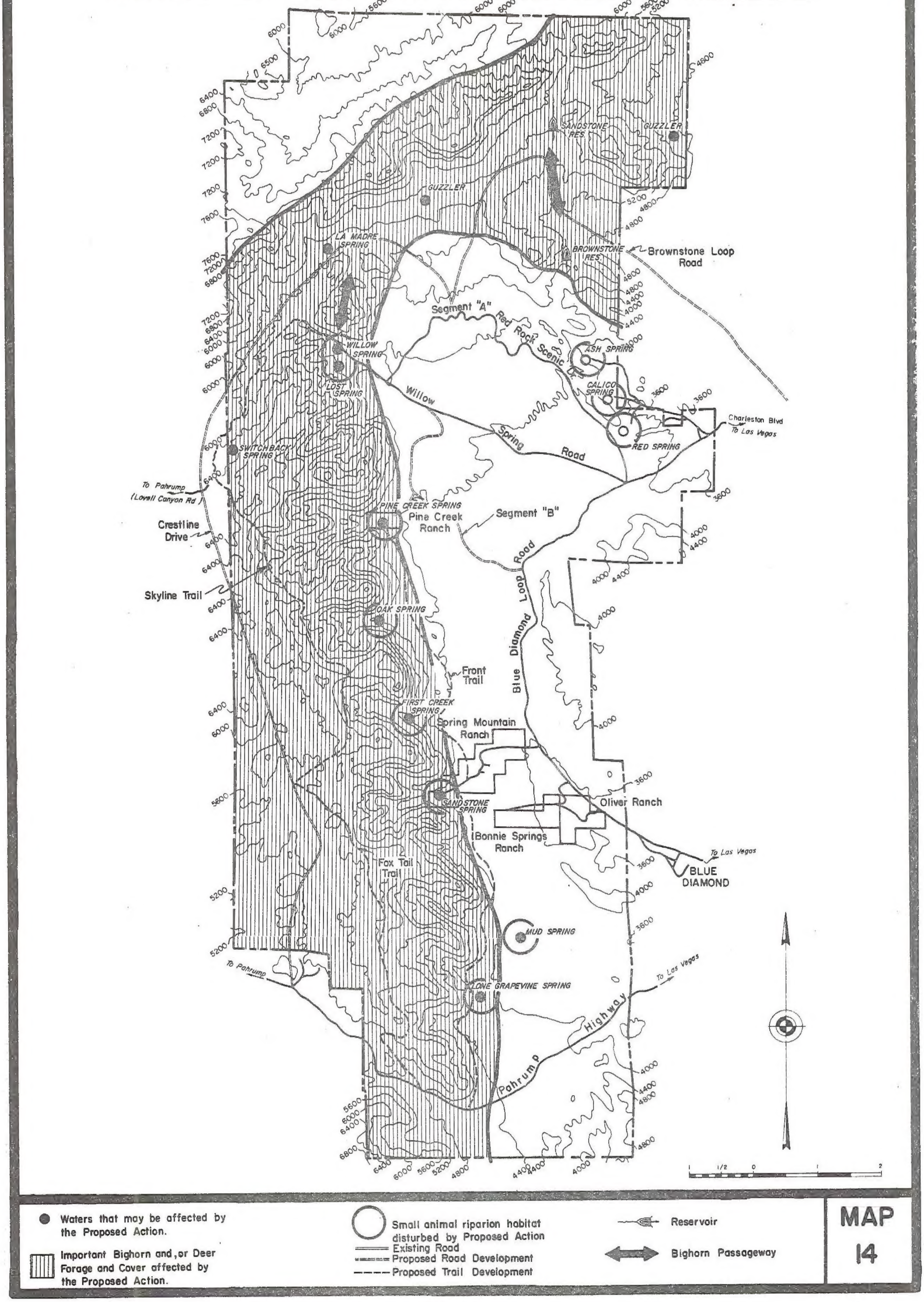
The proposed Front Trail passes close to Sandstone and Lone Grapevine Springs (crucial to bighorn sheep) while the Skyline Trail passes by Switchback Spring (used by deer) and numerous potholes in the sandstone escarpment utilized by wildlife.

Hikers or people on horseback frequently passing by springs could frighten away intolerant animals like bighorn sheep. The greatest use of these trails would occur during the summer, the same time that undisturbed water sources are most needed by wildlife.

c. Artificial water developments could be endangered by increasing the access to La Madre Range.

When developed, the Brownstone Loop Road and the Crestline Drive will improve access to 11,000 acres of valuable bighorn habitat in La Madre. Vandalism of guzzlers would become more likely as more people

IMPACTS OF THE PROPOSED ACTION ON WILDLIFE



MAP 14

venture into the back country. These guzzlers are the major source of permanent water during the summer to bighorn sheep and other smaller species of wildlife. Loss of these water sources could rule out bighorn sheep use of La Madre Range during dry periods.

2. Food

a. Increased human use of campgrounds and picnic areas may benefit some small animals.

The scraps of food and refuse left by increasing numbers of picnickers and campers would create a new food source for rodents, rabbits, reptiles, insects and some birds such as sparrows and wrens not frightened by human activities. Some animals like chipmunks may even become very tame. This situation may increase the hazard or nuisance to recreationists, however. Children may be bitten by small mammals or reptiles and all people may be annoyed by biting or stinging insects attracted to camping and picnic sites.

b. Construction of new roads could severely damage important wildlife forage.

The construction of the Crestline Road and Rams-Head Drive and across the escarpment could result in very serious consequences for wildlife preferring this pinyon/juniper area. The actual construction as well as the heavy use of the area resulting from improved access could irreparably disturb turbinella oak, silk tassel, manzanita, sagebrush, cliffrose, bitterbrush, snowberry, buckwheat and many other shrubs, grasses and forbs needed by herbivorous animals. This in turn will affect the carnivores which are a part of the same food chain.

This development above the escarpment could adversely affect more than 11,000 acres of year-round bighorn/mule deer habitat. Another 11,000 acres along the southern slope of the La Madre Range could be affected because of improved access provided by the Brownstone Loop Road and upper loop of Crestline Road.

3. Cover

a. Many acres of valuable wildlife cover could be disturbed by the construction of roads above the escarpment and in the La Madre area.

The Crestline Drive and Rams-Head Drive would divide more than 11,000 acres of valuable bighorn/mule deer habitat. The Brownstone Loop Road would improve access to another 11,000 acres. Birds, reptiles and small mammals as well as bighorn sheep and deer rely on the rocky outcrops, pinyon and juniper trees and undergrowth in these areas for cover year-round. The construction of the Crestline Road, in particular, would leave large cut and fill scars through the steep, rugged terrain. The cut slopes remaining would be very difficult to revegetate and many wildlife species would not be able to return to disturbed areas.

b. Increased human activity along the base of the escarpment, especially camping, could disturb nesting sites of birds of prey.

Under normal conditions, the nests of hawks, falcons and eagles would be securely nestled among quiet, cliff crevices in the escarpment. But large camping developments along the base of the escarpment may endanger these birds of prey. Rock climbing, egg and nest collecting, noise and movement of campers may all help drive these birds from their nests. This would be especially harmful to these species during incubation periods. This impact is not considered severe enough to effect the species as a whole but could be severe to individual birds.

c. Large picnic and camping developments could disturb riparian vegetation.

Riparian vegetation (plants growing next to streams or springs) provides cover for many species of birds, small mammals, reptiles and amphibians (see habitat preferences listed in Appendix III). Recreational developments like the 50 family picnic units proposed for Lost Creek can result in the destruction of much of this stream-side habitat. Riparian vegetation areas could be cleared for tables and trash cans and vegetation would be trampled by people walking around the streams or springs. The result could be many small animals would be driven from the waters they are so dependent upon in the dry, summer months.

4. Living Space, General Well-Being

a. The territorial areas of many species of wildlife could be disturbed by campgrounds and picnic areas.

Many birds, reptiles and small mammals stake out and defend small territories within which they feed, court mates and raise families. During construction of facilities many of these animals would be displaced and, if they are intolerant of humans, they won't return to their niches after the camping and picnic units are set up.

b. As the numbers of people using the Red Rock area increase, the indiscriminate killing and harassment of wildlife could increase.

The threat to wildlife increases as more recreational development occurs. Desert tortoises could be removed from the area and taken home as pets. Poisonous reptiles (rattlesnakes, the rare Gila monsters) as well as animals just thought to be dangerous (like the banded gecko, tarantula) could be deliberately killed. Thus the benefits these animals give us (keeping rodent and insect populations in check) could be lost. Other protected animals (kit foxes, hawks, etc.) could be shot just for pleasure. These impacts would not be severe for the Desert Tortoise or Gila Monster on the species level but could be severe for the local populations.

With the construction of Crestline Road, Rams-Head Drive and the Brownstone Loop, access to previously isolated wildlife habitat along the escarpment and La Madre Mountains will be improved. This would benefit legitimate hunters, but poaching of game out of season (bighorn, deer, elk, quail, mountain lion, dove, rabbit) could increase as a result of these new roads.

Little is known about the requirements of the protected spotted bat. Presumably it roosts in caves or under rocky ledges and feeds on insects at night. None of the proposed developments appear likely to adversely effect these creatures. Shooting them may reduce the local population but would probably not severely effect the entire species.

c. The number of animals killed by cars could increase with the addition of more than 35 miles of new roads.

Since the proposed Crestline Drive and Brownstone Loop Road cut right through bighorn and deer habitat, some of these animals could be killed while crossing the unfamiliar roads, especially soon after they're completed. Desert tortoise, kit foxes, tarantulas, rabbits, ground squirrels and some birds of prey feeding on animals killed in the road could be hit by cars travelling along the road system.

K. Wild Free-Roaming Horses and Burros

The proposed action would have many of the same impacts on horses and burros that it has on wildlife.

Construction of new roads, trails, camping and picnic developments would damage valuable forage. Off-road vehicle traffic (which would increase as access is improved) would also damage vegetation.

Increased traffic along newly-developed Red Rock Summit Road, Red Rock Scenic Drive Segment B and the Brownstone Loop Road would increase the chances of horses and burros being killed by cars.

Larger amounts of noise and human activity in the Calico Basin area (picnic developments are proposed for Red, Calico and Ash Springs), the Blue Diamond and Spring Mountain Ranch regions and along the Front Trail may lead to increased harassment of the animals and may drive them away from their usual feeding and watering spots.

Another impact may be an increasing hazard to humans as confrontations between hostile jacks or stallions and people at springs become more frequent.

L. Timber

No commercial saw timber exists on the Red Rock Canyon Recreation Lands. The proposed development would have little disturbance on the woodland vegetation except at locations where actual construction activities would take place. The major impact on the timber resources would be where new roads are routed through wooded areas.

The zone of impact would include the area where vegetation would be removed from the right-of-way. Dirt and gravel scraped from the roadbed would be pushed on top of young vegetation at the side of the road. Air pollution from passing vehicles could affect the roadside vegetation.

Campground and picnicking facility construction would likewise result in removal of vegetation. Additionally, increased visitor use could bring an increase in trampling, pollution, littering and vegetation vandalism. These impacts would be more critical in Pine Creek Natural Area, and the proposed Lone Pine Natural Area. The proposed action will, through the construction of Segment B of the Red Rock Scenic Drive and the Crestline Drive result in greatly increased visitor loads in Pine Creek and La Madre Canyon. The visitor use at Lone Pine should only increase slightly because the major traffic flow under the proposed action would be over the Crestline Drive rather than the existing Red Rock Summit Drive leading to the proposed Lone Pine Natural Area.

The proposed action would restrict or eliminate the possibility of harvesting Christmas trees, fence posts and firewood. The only forest related recreational activity allowed would be the collection of pinyon nuts. Some trespass cutting of firewood could take place in the Red Rocks as a result of the improved access especially near campsites.

The increased access provided by the proposed action could increase the chances of man-caused fires in woodland areas.

M. Ecological Interrelationships

Since an ecosystem is composed of all of the non-living and living components of the environment, any impacts upon these components will affect the ecological interrelationships as well. Impacts upon the soil or water, for example, will have ramifications throughout the ecosystem. Therefore, all of the impacts discussed to this point are applicable to the ecological interrelationships of the area.

It is most difficult, perhaps impossible, to quantify the impacts of any action upon an ecosystem. There is no doubt that the impacts upon the various components of the ecosystem that have so far been discussed could occur, but there is no way of knowing whether or not additional impacts may occur. This uncertainty is due to the many interconnections, cross-connections, pathways and loops that make up what has been aptly described as an "ecological web". One can never be certain what final effects an action will have upon such a web since the whole is greater than the sum of its parts.

It is certain, however, that human disturbance and interference is the prime cause of ecological deterioration. The presence of people, especially large numbers of people, and their activities are generally more than the plants and animals can stand. Those animals that can soon leave the area. Those that can't leave, disappear. The plants soon succumb to trampling, crushing, etc. and because of their slow reproductive rate, disappear. The disappearance of plants and animals in an area causes a domino or cascade effect in other areas by reducing the food supply.

Under the proposed action at least 362 acres will be disturbed and the plants destroyed during the construction phase. This destruction of plants will force the animals dependent upon them for food to go elsewhere. This in turn will overtax additional areas which now must support not only the residents but the new immigrants as well. This overutilization will cause a deterioration of additional acres which will cause further immigration. Such a cascade or domino effect could ultimately effect the entire Red Rocks. The migration of animals intolerant of humans or human activities including heavy recreational use would give added impetus to this cascade effect by overtaxing other areas.

Such migrations and overuse of an already limited food supply would break the food chains, disrupt predator-prey balances and so on.

As the ecosystem breaks down, it becomes increasingly susceptible to invasion by non-native plants and animals (Elton, 1958). These invaders are generally introduced species that have no or few enemies and which are not used as food by native species. In disturbed desert areas, cacti and creosote bush are replaced by Russian thistle, mesquite and cottonwoods by salt cedar, and native desert birds by pigeons, starlings and house sparrows. The commonest invading mammals are the house mouse, the house rat and feral dogs and cats. Once established, these aliens are extremely difficult to eradicate. All of them occur in the Las Vegas area, although they are not known to occur in the Red Rocks as yet. Both Russian thistle and salt cedar are particularly aggressive invaders because of the ease with which their seeds can be transported by wind or by man, himself, who can accidentally transport the seeds in his cars and campers and on himself and his family or on his pets. The ease with which pigeons, house sparrows and starlings can enter an area and quickly dominate it is legendary.

N. Archaeologic and Historic Resources

Physical destruction of archaeological sites by the construction of roads, trails and recreation facilities, etc., would likely be the prime impact on antiquities values.

Pot robbing and vandalism at archaeological sites may be increased as a result of improved access. This would depend on the manpower available to patrol the area and the measures taken to control physical access to the sites. Significant archaeological resources in the vicinity of Willow Spring (Rocky Gap) and Brownstone Canyon would be particularly endangered as the result of constructing facilities planned in the proposed action. The introduction of twentieth century facilities could adversely affect the integrity of the archaeological sites in terms of modifying the physical setting of the sites.

Historic structures located at the Spring Mountain ranch will not be significantly affected as a result of the proposed action. Increases in visitor use in the Red Rocks will result in increased visitation to these State of Nevada owned resources.

Within the Red Rocks, areas of some historic and archaeologic sites of local significance might qualify for inclusion on the National Register of Historic Places. Increased visitor use and possible destruction of these sites due to construction could destroy the significance of these sites and would, therefore, prevent them from being included on the National Register.

O. Las Vegas Area Land Uses

Implementation of the proposed action would cause little change in the present pattern of land use in the Las Vegas area. It is possible that the urban sprawl west from Las Vegas toward the Red Rocks could be significantly accelerated as a result of major development in the recreation lands. This would, in turn, require a more rapid extension of utilities, police and fire protection, road paving, etc. into the area surrounding the Red Rocks. Highway traffic would be increased and retail outlets could be expected to enter the area to serve the new residents.

Secondary impacts of developing a large recreation attraction would be the need for service facilities for the increased number of visitors. It is possible that service stations, stores, etc., would be placed near the entrance points to the Red Rocks. The increased construction, increased requirements for public utilities/services and increased populations in this currently uninhabited area could have distinct impacts upon the ecosystem. Of particular concern would be the air and water pollutants from these developments and their effects upon the natural plant and animal communities. The rapid expansion requirements for utilities and protection services could place added fee and tax burdens upon the present residents of the region.

P. Red Rock Area Land Uses

The construction of the Visitor Center and the Blue Diamond Administrative Site would create a need for utilities and access roads.

Both sites are on existing roads and new construction would be minimal. Utilities, electricity and telephone could be brought into the Visitor Center from existing lines serving the residential area in Calico Basin. Approximately 10,000 feet of new construction would be required. Extension of electrical and telephone service from the Visitor Center to the Blue Diamond Administrative Site would also be necessary. It is anticipated that water for both areas will be developed on site.

Concentration of recreational use into a limited number of recreation sites will result in a shift of use for some of the areas that presently receive limited informal use. A portion of these areas will revert to general open space use. Likewise, those sites that are proposed for development under the proposed action will shift from their present informal use pattern to one where uses are more formalized as well as more intensive in nature.

Q. Private Inholdings and Nevada State Park System Acquisitions

The proposed action will subject the private inholdings and Park System properties within the Red Rocks to increased littering, trespass, vandalism, crime, noise, air and water pollution, vegetative trampling, etc. in proportion to increases in visitor use of the Federal portions of the Red Rocks.

The proposed action would result in increased visitation to the Federal portions of the Red Rocks. Increased visitation to these areas will be responsible for increasing the visitation to the Bonnie Springs recreation development, the Spring Mountain Ranch and the Pine Creek Ranch. These increases will be as a result of recreationists visiting the Federal portion of the Red Rocks who discover these other attractions exist.

R. Existing Public Recreation Facilities

Implementation of the proposed action will lead to increased use of existing recreation facilities, especially roads and trails.

All of the existing roads retained under the proposed action would receive a very significant increase in wear. Without increases in the level of road maintenance in the Red Rock Canyon Recreation Lands, many of the roads could be impassable within a very short time, for example the gravel surfaced roads. Existing trails are the result of informal unplanned use. Increased visitation, due to implementation of the proposed action, could cause additional soil and vegetation trampling.

S. Waste Disposal

The impacts of planned waste disposal methods are largely confined to their potential effects upon ground water. They are discussed in the Water section of the impacts, page III-7.

One impact that the proposed action could have upon waste disposal is the effect upon the present trash pickup personnel. Increased use of the area would increase the amount of trash which would require more personnel, more frequent collections or both.

Developments of sanitary landfill facilities would provide the means for the proper disposal of litter and waste, thus having a positive impact on waste disposal.

T. Recreation Opportunities

Impacts on individual recreation opportunities not discussed in other sections (i.e. geology, wildlife, vegetation, wild free-roaming burros, primitive, archaeology and history aesthetics) are discussed below.

In general, the public will be more regulated and controlled under the proposed action; however, they will have better access to the recreation opportunities within the Red Rocks.

1. Sightseeing - vehicular sightseeing would be restricted to established roads and trails. All other sight-seeing would be by foot, horseback or non-motorized cycle (where appropriate). This impact would not reflect a change in the regulations but would reflect a more strict enforcement of the present regulations. Sightseeing and understanding of specific interests would be enhanced by improved access and interpretive displays along the roads, trails and at the Visitor Center.

2. Hunting - hunting access would be greatly improved as a result of the proposed action. Increased general visitor use would necessitate the closing of areas adjacent to intensive use sites. The entire area would be closed to the use of firearms except during established hunting seasons. Bow and arrow practice could be expected as it is not prohibited by county ordinance.

3. ORV - existing regulations restricting the use of motorized vehicles to designated roads and trails would continue to be enforced under the proposed action.

4. Collecting of minerals, invertebrate fossils and cactus skeletons - the proposed action would have no impact on legal collecting activities. Improved enforcement will help to discourage unauthorized collecting.

5. Mountaineering - access to climbing areas would be improved as a result of the proposed action.

In addition to the impacts the proposed action would have on the recreational activities, the proposed action if unmitigated by management upgrading would have a profound negative impact upon the enjoyment and safety of the recreationists using the Red Rock Canyon Recreation Lands. These impacts and the possible mitigations are discussed in the Management section of the impacts and mitigation discussions, pages IV-12 and IV-13 of this statement.

U. Recreation Use

Implementation of the proposed action will have several direct impacts upon the visitor use presently being experienced in the Red Rock Canyon Recreation Lands.

The major impact upon visitor use will be an increase in the numbers of persons visiting the Red Rocks which could at some time result in too many people entering the area than the area can accommodate and still provide a quality recreation experience. Following completion of the planned facilities, visitor use could be expected to begin to increase. At first the increase would be fairly slow. As it became more common knowledge that the Red Rocks had been adequately developed for recreation, this increase would tend to accelerate. This may include large numbers of southern California residents.

Another possible impact would be that facility maintenance would not be able to keep pace with increasing visitor use.

The camping activity in the Red Rocks is expected to increase under the proposed activity as is the length of stay and the seasons of use. Shelter and water would also be responsible for allowing significantly more day use during the hottest portions of the summer. A majority of this increased visitation is expected to concentrate at the planned facilities.

The following is a discussion of individual types of recreation uses and the impacts of the proposed action on them:

1. Picnicking - picnicking would be restricted primarily to prescribed picnic sites. The provision of adequate facilities would serve to concentrate picnicking use. This would help to decrease the litter and sanitation problems caused by widespread picnicking in undesignated areas. Furthermore, concentration of picnicking use will allow for better protection of the recreational resource and the recreationists. Additionally, for a majority of picnickers, the picnicking experience will be more enjoyable because of the improved facilities and better cleanliness.

2. Camping - camping would be restricted to prescribed camping sites. The provision of adequate facilities will serve to concentrate camping use with the same resultant benefits as for picnicking. The restriction of camping to designated areas will force a small minority of campers who do not desire to camp with other campers to use areas outside of the Red Rocks. Some provision will be made for allowing limited camping use of undeveloped areas along the Foxtail and Skyline Trails. This use is expected to be exceptionally low and will have only minimal impacts on the environment.

3. Hiking - would become more prevalent as a result of proposed trail construction. Visitors would be encouraged to use designated trails. By concentrating this use, protection of the hiking recreationists will be greatly improved. Hiking enjoyment will be enhanced by the provision of limited interpretive aids on designated trails.

The use of designated trails, however, may have important secondary impacts upon the area. Bainbridge (1974) suggests that impacts may occur in the form of destruction of vegetation, alteration of plant community composition, soil erosion, soil compaction and aesthetic values. The severity of these impacts appears to depend upon the number of users, the attitude of the users, the type of use (horse vs. foot), the type of footwear used (vibram lug soles are particularly destructive) as well as the characteristics of the natural environmental components (Bainbridge 1974).

4. Horseback Riding - same as hiking.

5. The Bonnie Springs Development - would receive increased visitor use as a result of the public developments in the Red Rocks. Conversely, the Red Rock Recreation Lands would receive a greater proportion of visitors from persons who have visited Bonnie Springs and desire to use developed picnicking and camping facilities but presently are obliged to travel to Las Vegas and beyond to obtain these facilities.

V. Management

Under the proposed action, increased visitor use would significantly add to the work load of the present protection and maintenance staffs of the managing agencies.

Additional acts of vandalism, increased numbers of injuries to recreationists and their property, more traffic accidents and even increased rates of crimes are all possible as a result of the construction of new roads and facilities. Improved access will increase the possibilities of vandalism, man-caused fires and other unauthorized activities in remote areas. The present ranger force would have significantly less time available for patrolling areas that receive sparse visitation. Less latitude would be allowed in types of patrols and patrol schedules.

Given the present ranger and maintenance force, with the proposed action being implemented (the assumption used for the analysis of impacts), the resultant situation would be considered by many to be chaotic and harmful to both the resources and visitors.

W. Political - Type of Government

County government and Federal and State agencies would continue to exercise control over the lands in the Red Rock Canyon area. The anticipated increase of people use could create a potential for the occurrence of more vandalism and indiscriminate use. There may be an increase in criminal offenses and uncontrolled group activities which could have an impact on local and county law enforcement.

X. Planning

The present county master plan does not cover the area in which the Red Rock lands are located. Any actions planned involving development or construction would be reviewed by the Clark County Regional Planning Council. Possible impacts include establishing a zoning pattern for the area, restricting lands uses, increasing property values on adjacent lands. These impacts would be the result of dedicating the Red Rock area to recreational use which would also involve many open space characteristics.

Y. Zoning

The only impact on zoning would be the possibility of the BLM requesting the county to rezone the Red Rock Canyon Recreation Lands and adjoining national resource lands as Open Space rather than Rural Open as it is zoned presently.

Z. Social and Economic Interests and Values

Implementation of the plan would provide job sources for a portion of the local work force in the Las Vegas community. Contractors for the proposed construction projects would purchase supplies, materials, etc. in the Las Vegas area. Based on current project construction costs, it is estimated that about $17 million would be contributed to the local economy.

The variety of recreation experiences offered at the Red Rock Canyon Lands could bring more people into the area possibly having minor secondary impacts upon the economy.

AA. Aesthetics

Some of the impacts upon aesthetics have already been mentioned in previous sections. These include the visual aspects of wildfires, vegetation removal or destruction, the planned gypsum mill and disfigurement of the rock formations (p. III-2). Other portions of the proposed action will have similar impacts.

The Visitor Center and Administrative Center could both be visual intrusions upon the area. The structures themselves could be so designed that they would not fit into the scenery or stand out as negative features of the landscape. Power and telephone lines leading to the centers could additionally affect the aesthetics negatively.

As indicated under the impacts on topography, both the Crestline Drive and Segment B of the Red Rock Scenic Drive will require moderate to large cuts and fills as presently planned. The visual impacts of these cuts and fills would be equal to or greater than those of Segment A discussed in the Aesthetics section of the existing environment, page II-67.

Visual pollution in terms of litter along roads and at developed areas can also be expected to increase unless properly managed. Roads, facilities and camper vehicles will also cause an unnatural visual intrusion on the area.

Increased visitor use will result in greater amounts of vehicle emissions in the area causing an increase in undesirable odors. This will be especially true at the larger planned picnic and camping sites.

There will be some heavy equipment noise during the development phase of the proposed action. The concentration of adults, children and their activities will create varying levels of noise.

BB. Primitive and Natural Environmental Values

The degree of impact upon primitive values would vary with each area's existing inherent values, as discussed in the Primitive and Natural Environmental Values section of the existing environment, page II-67. The "C" rated area has a low value for primitive use at the present time. The development of additional facilities in this area could reduce this value but not significantly. On the other hand, the "A" rated area has a very high primitive value. (See map 13 for evaluation of areas in the Red Rocks).

The introduction of additional man-made facilities or additional visitors could have very significant degrading effects on the primitive values. Presently the road over Red Rock Summit is the only intrusion substantially affecting the primitive values in the "A" rated area. The Brownstone Loop Road and the Crestline Scenic Drive both proposed for construction under the proposed action, would have very significant negative effects on primitive values. Approximately 6,200 acres of land having high primitive values would be directly or indirectly affected by the construction of these roads and their associated recreation developments. Also, more people would have direct access to the remaining potential primitive areas. This increased visitor use could tend to significantly degrade the quality of the experience for dedicated wilderness enthusiasts.

The impact of the proposed action upon the "natural environmental area" as defined and delineated in the Primitive and Natural Environment section of the existing environment, page II-67, would be even more significant.

The first impact on the natural environmental area concept would be that two areas already partially affected by development -- Pine Creek and Oak Creek -- would not, if the proposed action is taken, be allowed to revert back to nature. In fact, under the proposed action, they would be even further developed.

The second impact would be all proposed developments within the natural environmental area (see map 12, page II-68) would be constructed and would remove the area from the potential of being a natural environmental area and being maintained as such.

Approximately 11,424 acres of natural environmental areas would be directly affected by the proposed action, much of it Bighorn Sheep habitat.

CC. Hazards

Many of the impacts of the proposed action are increased hazard potentials. These potentials have been discussed under a number of the preceding environmental components.

The impacts of the proposed action on hazards in the Red Rocks are:

1. Floods - discussed in the Water impact section, page III-8.

2. Contaminated water - discussed in the Water impact section, page III-7.

3. Vehicles and roads - the development of the roads discussed in the proposed action may have serious consequences for recreationists and wildlife. Paving Crestline and Red Rock Scenic Drives and developing the Brownstone Loop could allow more cars to travel at higher speeds through the Red Rock area. Meanwhile recreational developments will invite large numbers of recreationists (hikers, people on bicycles and motorcycles, etc.) into the area. Therefore, the chances of collisions between cars and people on foot, cars and bikes, cars and wildlife and cars and cars would significantly increase.

4. Fire - discussed in Fire impact section, page III-8.

5. Firearms - the incidence of illegal discharge of firearms below 5,000 feet and the resulting hazard to picnickers and campers could increase as more people use new developments below the escarpment.

6. Crime - also, as more people congregate in these new developments, the crime rate could increase.

7. Venomous animals - development of large picnic areas, overnight camping sites and foot trails could increase the number of confrontations between people and venomous animals (rattlesnakes, Gila monsters, scorpions and spiders).

8. Geologic - discussed in Topography and Geology impact sections, page III-2, III-3.

9. Poisonous or dangerous plants - the incidence of people being scratched by cacti and yucca and of children accidently swallowing poisonous plants could increase as larger numbers of people explore wild areas around picnic and camping developments.

10. Wild horses and burros - discussed in Wild and Free-roaming Horses and Burros impact section, page III-14.

IV. MITIGATING MEASURES INCLUDED IN THE PROPOSED ACTION

In this section all available and technically feasible measures that could be taken to prevent or minimize the impacts caused by the proposed action will be discussed. These measures include not only those measures that are included in the proposed action but also additional measures that could be taken by the BLM, other Government agencies, private individuals or corporations.

A. Climate

None are needed nor are any technically feasible.

B. Air and Air Quality

1. Measures included in the proposed action

a. Wet down all construction sites to minimize dust or use chemical stabilizers.

b. Stipulate that all equipment used in construction will be in proper working condition and be equipped with emission control devices.

c. The amount of clearing in advance of construction will be limited to the smallest possible areas to minimize dust.

d. Clearing will be done as close to the construction date as possible in order to reduce dust.

e. Equipment and construction practices will be such that all applicable Federal, State and county air quality standards are met pursuant to the Clean Air Act, as amended (40 U.S.C. Sec. 1857 et. seq.)

f. All presently unsurfaced roads that are part of the proposed action will be paved to minimize dust.

g. Vehicular travel will be limited to paved roads and unwanted roads eliminated dust from this source.

h. The Red Rock area will be closed to off-road vehicle use.

i. Only charcoal briquette-type grills will be provided and the number of campfires and grills limited to the smallest number necessary in order to minimize pollution from this source.

j. Open campfires will be prohibited in the entire area.

k. The area will be protected from wildfires and those that occur will be controlled as soon as possible.

1. The entire Red Rocks area will be closed during high and extreme fire danger periods.

2. Additional measures

a. Emissions from the present and future gypsum mills could be reduced by the employment of pollution control devices and complying with applicable County, State, and Federal air pollution regulations.

b. The air pollution problem in the Las Vegas Valley area and its effect on the Red Rocks could be mitigated by a number of measures including reduction in the number of cars, installation of control devices on all vehicles, increased public transportation facilities compliance with applicable air pollution regulations, or a combination of these along with emission controls on stationary sources in the valley.

C. Topography

The impacts of road construction on topography can be mitigated to a large extent by following the land contours. However, redesigning the roads to follow contours would create an up and down road pattern which might make them more hazardous to motorists unless carefully designed to avoid blind hills.

D. Geology

Increased management and greater interpretative and educational programs will mitigate increased vandalism and hazards due to rock falls.

An adequate ranger force and people management programs will minimize vandalism and hazards from rock falls.

Evaluation prior to construction will help to minimize such hazards.

E. Minerals

None are included in the proposed action. Some possible measures are:

1. The impacts of curtailed leasing for oil and gas and the impacts of exploration and development of such resources if they exist could be mitigated by allowing such leasing but not allowing any construction on or occupancy of the surface or by including protective stipulations in the lease.

2. The impacts of continued exploration on existing mining claims could be mitigated by investigating the validity of such claims as soon as possible. Operations on invalid claims would cease, but would continue on valid claims.

3. The impacts of the planned expansion of gypsum mill could be mitigated by a mill design that would include considerations of the scenery and environmental character of the area.

4. Relocate proposed development within the Red Rocks to a location that would not be in view of the planned mill site.

5. The impacts of truck traffic from this mill could be mitigated by using an alternate route. Warning motorists of the hazard is required by law.

6. Planning now to meet future demands for sand and gravel could prevent the Red Rocks from becoming the only available source of this material. This would entail identifying and setting aside other deposits to prevent the Red Rocks from ever becoming the only source.

F. Soils and Watershed

1. There are several measures that will be taken to minimize the impacts upon the soils. These include:

a. Paving of all roads and developments to prevent continued soil erosion of those areas.

b. Wetting down all construction sites during construction to minimize soil erosion.

c. Limiting the amount of clearing to the smallest possible areas and clear only those areas actually needed for construction.

d. Clearing as close to the construction date as possible to reduce the length of time disturbed areas are left uncovered.

e. Sloping all road cuts to minimize water erosion.

f. Installing water bars or other devices to prevent water erosion and gullying on cuts.

g. Revegetating cuts and fills if possible to keep the remaining soil in place.

h. Stockpiling of the topsoil (root zone) from road and facility constructing and spreading it over compacted subsoils near facilities to improve planting success because of the granular structure of the topsoil which would have better aeration and infiltration rates than the compacted material.

i. Closing of sites on a rotational basis could allow an area to recuperate from previous use.

2. The mitigating measures for impacts on watershed are as follows:

a. Grading and clearing will be kept to a minimum and where possible all existing vegetation should be retained on the sites. Topsoils will be stockpiled, where possible, from the construction operations for use in the revegetation of disturbed areas.

b. Close supervision of the construction operations will be provided to insure equipment is kept within the construction site limits. The surface area to be exposed by construction operations at any one time will be limited to reduce dust and erosion damage to the surrounding area vegetation and natural surface.

c. Roadways will be designed without large roadside ditches, shoulders or flat slopes to minimize the size of the disturbed area. Fords, culverts with special end sections, and rock rip-rap (a wall or bedding of loose stones) could also be used to control erosion and runoff. No development is anticipated along existing floodways except for roads. Where roads cross major floodways, grade crossings will be constructed which do not restrict the flow of water.

d. Existing roads and developments that are no longer needed under the proposed action will be scarified and seeded with native vegetation to reduce surface runoff and erosion in the area.

e. Development within watersheds having critical erosion rated areas will be avoided as much as possible.

G. Water

The only mitigating measures included in the proposed action that relate to water supply are:

(1) Surface water will not be used for human use. Well water will be used instead (master plan, p. 2-A).

(2) Surface water will be maintained for wildlife use and to support the existing riparian plant community (master plan p. 2-A).

The impacts upon water and water quality can be mitigated to some extent by the following measures, some of which are included in the proposed action:

1. Begin monitoring springs to determine flow rates seasonal and yearly changes in flow and so on. This will provide background data to judge the effects of wells upon the springs.

2. If it is determined the water wells are adversely affecting the springs the wells should be shut down and a new water supply developed or water trucked in.

3. Surplus well water could be utilized to supplement spring water for wildlife and vegetation management.

4. Investigate the hydrology of the area and determine the water recharge areas, flow rates, volume, potential for development and configuration of the aquifer or aquifers. This is already being done by the Desert Research Institute for the Nevada State Park System properties. The study should be expanded to include the entire Red Rock area.

5. Continue water sampling and water quality determinations of all surface waters in the area. Contaminated waters should be signed or posted to warn potential users of the hazard.

6. Using pump-out vault types of lavatories and commercial trash collection and removal would prevent contamination of ground water by septic tanks and save water for other uses than for flush toilets.

7. When the sanitary landfill is constructed it's location and construction will be determined by a geologic investigation in order to ensure the landfill is safely located, meets State and County standards for solid waste and will not contaminate the ground water.

8. Developments will not be located in or near flood hazard areas or in areas where the escape routes may be flooded.

9. Continued flood hazard inventories such as the ones done in the Red Rocks by the U.S. Geological Survey and the BLM, will be made to determine those areas most subject to flooding and areas safe from such hazards as required for all Federal properties.

10. Flood and flash flood areas will be posted and signed to warn users of the hazard.

11. Design facilities so they will not contribute to flood and hazard conditions.

12. The development, management and operation of the proposed action will be conducted in such a way as to eliminate or minimize water pollution. At all times, including construction and operation, all applicable Federal, State and county water quality standards will be met.

H. Fire

The impacts of man-caused fires can only be mitigated by a continuing educational process that would make people more careful with fire and by restricting the use of fire to grills and fireplaces. A secondary impact would be the need for increased management personnel.

Emergency closures of areas during high and extreme fire danger periods will assist in mitigating the impacts of man-caused fires.

Increasing management personnel to enforce these regulations will assist in mitigating the impacts.

I. Vegetation

To mitigate the impacts of visitation created by the proposed action on vegetation (i.e. vandalism, collection and trampling), increased ranger patrols and a guard station at Pine Creek will be necessary.

A complete inventory of the plants at Pine Creek and Lone Pine and an evaluation of their uniqueness will be made.

Since the Nevada Park System now owns the Pine Creek Ranch, close to the Natural Area, any plans for the area will be closely coordinated.

Additional measures include:

Rotating the use of sites to lessen the impact on vegetation.

Damage to plants by trampling could be mitigated by some form of soil aeration, irrigation and fertilization. Also dead and dying plants could be replaced by healthy plants from other areas.

Damage and loss of vegetation due to collection, vandalism and man-made fires could be mitigated by educational programs and increased ranger patrols.

Monitoring of the wells and springs as described under the mitigating measures for water would go a long way in protecting the riparian and semiaquatic vegetation.

The stand of Clokey's cholla cactus occurring at the Visitor Center site could be protected by determining its exact location and size and planning the Center in such a way as to leave the plants undisturbed. A beneficial impact of this measure, beyond saving the plants, would be that visitors could view these rather unique plants conveniently and at close range.

J. Wildlife

1. The impacts of the proposed action on wildlife waters will be mitigated by:

a. Making water available at the spring source for wildlife while using pipelines, wells or some other method of getting water to recreationists.

b. Diverting roads and trails so they do not pass within a quarter mile of springs or reservoirs that are important to wildlife. This same rule would apply to development of any other recreational facility.

c. Developing more artificial water sources specifically for wildlife, away from recreational developments.

Additional protection could be achieved by allowing day use only at La Madre Canyon and Willow Spring.

2. The impacts of the proposed action on wildlife forage and cover will be mitigated by:

a. Revegetating all areas disturbed during the construction of roads, trails and camping, picnic and administrative sites.

b. Protect riparian habitat near Lost Creek and other springs by keeping equipment within construction limits and locating facilities at least 100 feet away from riparian habitat.

c. Encouraging recreationists to use only the specially designated trails.

d. Strictly enforcing regulations that restrict vehicles to designated roads and trails.

e. Not locating campsites directly below cliff nests of birds of prey.

3. The impacts of the proposed action on living space and general well-being of wildlife will be mitigated by:

a. Developing special management plans for threatened or protected species in the Red Rocks (Desert tortoise, Gila monster, kit fox, prairie falcon, hawks and owls). These plans would identify specific habitat needs and problems and important wildlife areas (breeding grounds, vital waters, etc.) needing protection. These plans would be developed to comply with Public Law 93-205, the Endangered Species Conservation Act and all Nevada State wildlife conservation measures.

b. Providing information and education programs at the Visitor Center and along the transportation system supplemented by the distribution of educational brochures which will acquaint the public with the value the wildlife species, especially protected species, inhabiting the Red Rocks. Displays could also be constructed at the Visitor Center to allow visitors to see or touch animal specimens. The laws against harassing, collecting or killing threatened or protected species will be emphasized in all educational programs.

c. Providing stricter enforcement of the county ordinance against discharging firearms in the Red Rocks. This will assist in the protection of wildlife against poaching and harassment.

d. Posting signs along existing and newly developed roads warning motorists to look out for tortoises, bighorn, deer, foxes and other wildlife crossing these paths. Lowering speed limits in these areas would also be helpful.

K. Wild Free-Roaming Horses and Burros

The adverse impacts of the proposed action upon wild and free-roaming horse and burro populations will be mitigated by:

1. Developing a horse and burro management plan for the Red Rocks to identify numbers of animals, their distribution, crucial water, forage and breeding areas, etc., in compliance with the Wild and Free-Roaming Horses and Burros Act of 1971.

2. Transferring all horses and burros to an established wild horse and burro range in the Red Rocks. The Spring Mountain allotment has been suggested as a potential range where the animals' water and forage needs can be satisfied, they can be protected and the public can come to specifically view wild horses and burros.

3. Distributing brochures and providing displays at visitor centers or informing the public of the history and habits of the wild horses and burros and of the new law protecting them.

4. Strictly enforcing the law prohibiting the harassment, capture or killing of wild horses and burros.

5. Diverting the Front Trail around any waters identified as being important to wild horses and burros.

6. Developing separate waters for wild horses and burros away from recreationists.

7. Posting signs along roads warning motorists to look out for wild horses and burros.

8. Restricting vehicles to designated roads and trails.

9. Revegetating where possible areas disturbed during construction of roads, trails, picnic sites, etc., to provide forage for these animals.

L. Timber

1. Whenever revegetation techniques are implemented, first priority will be given to using native species.

2. Wherever possible, developed sites will be constructed with the existing vegetation being left in place.

3. No facility development except foottrails will be allowed in the Pine Creek Natural Area. The adjacent area could be restricted to day use and patrols implemented to enforce this restriction in order to further protect the area. A detailed management program will developed and implemented to protect, preserve and interpret this unique ecological community.

4. No developments should be planned for the potential natural area at Lone Pine other than using the existing road as a foot trail. The area will be included in the patrol route for the ranger force. A detailed management program will be developed and implemented to protect, preserve and interpret this unique ecological community.

5. Development proposed at La Madre Canyon will utilize sites devoid of vegetation as much as possible. The area will be patrolled as necessary.

6. Vehicle traffic could be limited in some areas to reduce damage to vegetation.

7. Trees that can be utilized elsewhere that lie within construction limits will be transplanted. Contract stipulations will require equipment to stay within construction limits to prevent unnecessary damage to existing vegetation from equipment and displaced soil.

8. The entire area will be patrolled by the ranger force to prevent unlawful removal of timber for firewood and Christmas trees and lessen the chances of man-caused fires.

M. Ecological Interrelationships

The impacts of the proposed action upon the entire ecosystem could be mitigated in the following ways:

1. Implementation of the mitigating measures described for the components of the ecosystem.

2. Research into the ecosystem itself to determine its carrying capacity in terms of levels of development, levels of people use, etc., and developing only to the limit the ecosystem can withstand or sustain without deterioration.

3. Monitoring of the ecosystem after development to ascertain impacts that occur but were not identified and taking action to correct or mitigate them.

N. Archaeology and History

1. A detailed archaeological and historical survey by a professional archaeologist will be completed prior to final design at all proposed development sites and along all road and utility corridors where development will take place.

2. Prior to implementation of the proposed action, compliance with the Historic Preservation Act, Executive Order 11593 and the Salvage Act will be met. The Nevada State Preservation Officer and the President's Advisory Council on Historic Preservation will be contacted to solicit their evaluation of the impacts of the proposed action on archaeological and historical values.

3. If technically feasible, developments will be moved or modified to preserve archaeological and historical sites and values.

4. Whenever possible, archaeological and historical sites will be protected and interpreted. If construction or subsequent activities would significantly mar or destroy the site's scientific values and no practical means of protecting the site is available, the site will be excavated, researched and salvaged by a competent archaeologist prior to construction.

5. If an archaeological or historical site or value is discovered during the construction process, construction will be halted until a thorough investigation can determine the possibility of protecting the site and/or the advisability of conducting a salvage of the resource.

6. When necessary, barriers will be placed around archaeological or historical sites where there is a high probability of pot robbing or vandalism. Interpretive signs will be placed at most significant sites requesting cooperation from the visitor for the protection and preservation of the values therein. However, some sites are not identifiable by the average visitor. The best protection afforded these sites is to leave them unmarked in cases where they do not warrant immediate protection and interpretation.

7. Regular patrols will be made into areas having archaeological sites to insure public compliance with the rules and regulations governing protection of antiquities.

8. Visitors will receive instructions at the Visitor Center concerning the rules and regulations pertaining to antiquities and these rules would also be placed on signs adjacent to areas having significant archaeological values.

9. Nevada State Park System protection and interpretation programs should stress the values of the historic and archaeologic sites and values located on their Spring Mountain Ranch. Likewise, BLM programs should stress the need for appreciating and protecting these resources

10. An archaeological survey will be made of the entire area pursuant to E.O. 11593.

O. Las Vegas Area Land Uses

The impacts caused by a possible rapid westward expansion of the Las Vegas metropolitan area could be partly or fully mitigated by imposing zoning and building restrictions that could slow or even stop urban expansion toward the Red Rocks.

P. Red Rock Area Land Uses

The visual impact of utility lines needed to service the Visitor Center and the Administrative Site can be mitigated by utilizing underground cables or using on-site generators for power.

Q. Private Inholdings and Nevada State Park System Acquisitions

Impacts of the proposed action on private inholdings and Nevada State Park System acquisitions due to increased visitation (such as increased vandalism, littering, crime, noise, air pollution, etc.) can be mitigated by the same measures discussed in other parts of these sections (such as mitigating measures for air and air quality, aesthetics, recreation management, etc.)

Additionally, impacts on these areas (private and State) could be partly or fully mitigated by closing of these areas to the public. However, this measure would seem to be practical only in the cases of the Oliver Ranch and the Calico Spring Girl Scout Camp. The Bonnie Spring Ranch and Spring Mountain Ranch are presently devoted to general recreation use. The Park System's plans for the Pine Creek Ranch and the Spring Mountain Ranch have not been formulated pending the results of this impact statement.

All aspects of development and management of the area will be closely coordinated with the Nevada State Park System.

R. Existing Public Recreation Facilities

Several measures could be taken to mitigate the impacts of the proposed action upon existing public recreation facilities.

1. Construction of the proposed facilities could be accelerated to limit the time that increased visitation (generated by publicity of the proposed action) would have to be handled by the existing facilities.

2. The level of road and facility maintenance could be improved by the addition of personnel, equipment and materials to allow more permanent repairs, more frequent repairs and to allow quicker reaction to emergency repair requirements.

3. Considerations could be given to paving more of the roads in the Red Rocks to prolong useability of roads. Impacts of paving these roads would have to be weighed against the benefits of having them paved.

4. Planning and construction of a formal trail system will attract visitor use, thereby reducing the impacts on informal trails allowing the soils and vegetation to rejuvenate themselves.

S. Waste Disposal

Possible means of mitigating the impacts of solid and liquid waste disposal are discussed in the mitigating measures for water section, page IV-4.

The impacts upon BLM personnel due to a substantially increased trash load could be mitigated by increasing the number of collection personnel and increasing the frequency of pickups. An alternative would be to contract a private collection agency to do the job.

Implement a public education program to encourage visitors to "pack it out and haul it home".

Another mitigating measure would be for the BLM to join a local campaign of litter pickup, commonly called "Pitch In".

T. Recreation Opportunities

The mitigating measures for protection and preservation of the recreation opportunities (i.e., geology, wildlife, vegetation, wild free-roaming horses and burros, primitive, archaeology and history and aesthetics, etc.) are shown in the specific sections on these resources.

U. Recreation Use

The major impact on visitor use will be that the increase in numbers of people could someday exceed the level the area can accommodate without deterioration and still provide a quality recreation experience. Measures that would help mitigate this impact are:

1. Usage could be controlled at any given area or time through a fee and permit system.

2. Programs could be developed that would encourage visitor use during off-season or low peak periods by offering incentives such as fireside programs and guided tours.

3. Another impact could be that the facility maintenance would not keep pace with increasing visitor use. This could be mitigated by providing additional manpower into the maintenance program. Also funds collected through the fee system would be credited to the Red Rocks area for use to increase facility maintenance, pursuant to Public Law 93-303.

4. Bainbridge (1974) suggests a monitoring program to determine the severity of impacts due to visitor use of trails. Should such impacts warrant additional measures, he suggests trail rotation, closure to horse riding, closure to vibram lug boots, limiting trail use, and rehabilitation as possibilities.

V. Management

Measures that will be implemented to mitigate the impacts of the proposed action upon management are:

1. Increase the total numbers of well-trained ranger personnel to meet the levels and types of visitation expected to occur. This measure will be taken in advance of the expected visitation increases to allow for proper training.

This could allow more competent protection of recreationists and their property, more frequent patrols, greater ability to vary patrol strengths in response to expected changes in visitor use, the ability to patrol less accessible areas and the ability to more adequately contact the individual recreationist.

2. Equipment provided to ranger personnel will be significantly upgraded. Particular attention will be paid to the patrol vehicle, communication systems and crowd control equipment. All patrol vehicles will be in excellent mechanical condition, be spotless in appearance and give an official image of willingness to assist the recreationist while firmly enforcing the area regulations. Communications systems will be capable of maintaining effective communications between all ranger personnel (regardless of agency), the Administrative and Visitor Centers, the Las Vegas District Office of the BLM, the Blue Diamond substation of the Sheriff's Department and the Metropolitan Las Vegas Police Department headquarters.

3. Ranger personnel will be afforded every opportunity to participate in law enforcement, safety, firefighting, rescue and first aid training programs offered by the BLM and outside agencies.

4. Coordination between the protection staff, the Nevada State Park System and other local law enforcement personnel will be upgraded.

5. The enforcement activities in the Red Rocks will be managed on a semi-autonomous basis with regard to the BLM District Office in Las Vegas. This would allow for quick reaction times in emergency situations.

6. Interpretative center personnel will be utilized to assist in observing the coming and going of visitors to the northern portion of the Red Rocks.

7. Fires will be permitted only in designated areas.

8. Hunting and the discharge of firearms will be prohibited in the vicinity of recreation use areas and below the escarpment.

9. Conflicts between recreation users will be minimized by separation of the various uses. For example, separate areas would be clearly designated for group camping, family camping, group picnicking, administrative facilities or primitive trails.

10. Areas of the Red Rocks will be closed to visitor use where there are extreme hazards to the visitor or resources such as high probability of flash flooding, high fire hazard condition, etc.

11. Facilities will be designed to resist vandalism and to allow for the maximum visitor safety while providing maximum utility. Strong consideration should be given to conducting an independent review of the safety characteristics of both existing and planned facilities and roads.

12. Site designs will be carefully prepared to avoid overcrowding and overuse of the resource. Designs limiting the potential numbers of visitors to given sites through parking or facility limitations will be considered where appropriate.

13. Interpretative and general information programs will be designed and conducted to instill respect and understanding of the resources found in the Red Rocks. Major themes for these programs will enhance the recreational experience available while helping to protect the visitor and the resources. Rules and regulations for visitor conduct will be prominently posted wherever visitors could be expected to congregate.

14. The Visitor Center will expose the public to the environmental complexities of the Red Rocks area through displays, audio-visual programs, brochures and personal contacts with professional naturalists stationed at the Visitor Center.

15. The entire area will be closed to off-road vehicle use.

One of the objectives of this information and education program will be to reduce the amount of ignorant destruction of animals, plants, geologic and cultural values found in the Red Rocks.

An indoor/outdoor education classroom and general information and entertainment program could also be used to strengthen the visitors' understanding of the environmental values the area has.

Additional mitigating measures not included in the proposed action include:

1. The Clark County Sheriff's Office could upgrade the level of support to the Red Rocks in response to expected visitation increases.

2. The BLM should be given true law enforcement authority as a result of Congressional action.

3. Visitation could be limited to certain times of the day, days of the week, or seasons. Furthermore, visitation could be limited to specified numbers of recreationists at given sites. Lengths of stay could be limited as well.

W. Political - type of government

The increased visitor use brought about by the proposed action will inevitably result in increased criminal activities of some type. This would impact local and county law enforcement. Mitigating measures for this impact include:

1. Developing a formal cooperative program of law enforcement with local and county law enforcement agencies.

2. Increasing the ranger force in the Red Rocks to handle the increased activity so county and local agencies would not be needed as much.

X. Planning

The impacts on local planning will be mitigated by coordination with local agencies on land use in the Red Rocks area.

Y. Zoning

The only mitigating measure of a BLM request for rezoning would be the fact that the agency would be required to present its request for rezoning before the county commissioners at an open public meeting, thus insuring public involvement and comment in the rezoning decision.

Z. Social and Economic Interest and Values

No mitigating measures are needed because impacts resulting from the proposed action (i.e., more jobs and income for the area) would be considered positive.

AA. Aesthetics

1. Grading and clearing will be kept to a minimum. This will be achieved by selecting sites or alignments where the development would require a minimum of grading and clearing. Where grading and clearing is required, cuts and fills will be kept to a minimum. Cleared and graded areas will be contoured and revegetated if possible

to harmonize with the line, form, texture and color of the immediate area. Native vegetation will be preserved where at all possible. Within the realm of technical feasibility, plants which have to be removed will be preserved and transplanted.

2. The overriding criterion in the location of all developments will be preserving of the natural environment or the natural scene as much as possible. This includes consideration of the inherent effects that would accompany construction and operation of the sites, such as increased trampling and vandalism.

3. All structures will be designed to harmonize with the line, form, texture and color of the existing landscape.

4. Information and interpretive signs will be rustic in character and should be located and designed to blend with the natural landscape. Traffic control signs will be kept to an absolute minimum yet still insure visitor safety. The posts and backs will be painted to harmonize with the surrounding area.

The total sign program will be fully developed prior to actual construction.

5. Every effort will be made to control the visitors so they would not destroy any environmental qualities. The rules and regulations governing the use of roads, trails, garbage facilities, etc. will be prominently displayed at the Visitor Center (the point where most visitors would enter the area) and at all the developed sites. Roads will be designed to discourage off-road use.

6. Visitors will be encouraged via publications, signs and oral instructions to stay on designated trails and to deposit litter and garbage in receptacles furnished and regularly maintained at all developed sites and other logical locations. All development areas will be patrolled on a regular basis to insure visitor compliance with the rules and regulations.

7. All telephone and powerlines will be located underground. This measure is in conformance with Federal recreation development guidelines.

8. All existing roads, trails, etc., which are vacated will be restored to a natural condition by scarifying the area and revegetating with native species, if possible.

9. All vehicles using the area will be required to meet the noise and air pollution standards required by Federal, State and county regulations.

10. Other possible mitigating measures affecting aesthetics of the area as sections of this statement including soils, topography, geology, minerals, water, vegetation, wildlife, etc., will also be considered.

BB. Primitive and Natural Environmental Values

Loss of primitive and natural area values as a result of the proposed action will be minimized by the application of the following mitigating measures:

1. Design all facilities so as to limit their visual impact upon the remaining primitive and natural environmental areas. This will be accomplished primarily through locating the facilities in sheltered areas, limiting their height and selecting construction materials tending to blend into the natural surroundings. Parking facilities will be located to be as nearly concealed as practical.

Additional measures include:

1. The number of visitors to primitive and natural environmental areas could be limited under a quota system.

2. The Red Rock Summit Road should remain closed to vehicular traffic.

3. The traffic on the newly constructed Crestline Scenic Drive and Brownstone Loop Road could be limited to a specified number of vehicles per day.

4. No facilities or developments should be allowed in a natural environmental area.

5. Any facilities constructed within a primitive area should be held to the absolute minimum providing resource and visitor protection and not facilities for visitor comfort. Emphasis should be placed on limiting the number and scale of these developments.

6. The use of mechanized equipment on the periphery of primitive areas should be strongly discouraged.

CC. Hazards

Most of the adverse impacts of the proposed action on hazards can be mitigated by measures suggested in other sections (see fire, geology, topography, water, wild free-roaming horses and burros). In addition, the following mitigating measures may reduce the number of hazards to recreationists in the Red Rocks:

1. Make Red Rock Scenic Drive, Crestline Scenic Drive and the Brownstone Loop Road one-way thoroughfares to reduce the threat of collision.

2. Include special bicycle paths when new roads are constructed.

3. Post signs to warn motorists of dangerous curves, wildlife crossings, etc.

4. Set and enforce low speed limits.

5. Strictly enforce rules against discharging firearms below 5,000 feet or set up special areas where this activity can be allowed and supervised.

6. Have displays at the Visitor Center to inform people of the poisonous plants and animals in the area and of first aid measures to be taken if someone should be bitten or poisoned.

7. Add additional management personnel with enforcement authority to the existing force to ensure that the rules and regulations are followed and to assist visitors in trouble. This increased manpower should include additional search and rescue teams.

8. The impact of a possible increase in crews in the area due to the proposed action is mitigated under Management, page IV-12.

V. ADVERSE IMPACTS THAT CANNOT BE MITIGATED

As previously indicated there are a number of impacts upon the environment that cannot be avoided if the proposed action is implemented. Since no means of mitigating these impacts can be taken, the implementation of the proposed action must be weighed against these losses. These adverse impacts that cannot be avoided include:

A. Air and Air Quality

An increase in air pollution would result. The exact amount of pollutants that could be expected from the Las Vegas Valley area, automobiles in the Red Rocks and heavy equipment used during construction is not known. Projected figures for the estimated amounts of air pollutants for vehicles are given under the Air and Air Quality section of impacts, page III-1. These pollutants which include oxides of sulfur and nitrogen, hydrocarbons, particulate matter as well as carbon monoxide will result in a deterioration of the recreational experience in the area. They would be most concentrated in and around camping and picnic sites and the visitor center where vehicles and people will congregate. The odors, etc. may reach objectionable levels under such conditions. In addition these pollutants may harm plants, wildlife and humans.

Pollutants from Las Vegas while not a part of the proposed action will adversely affect the proposed action and the Red Rocks by increasing the level of pollutants over the entire area, thereby reducing the recreational values of the area.

These problems will increase until such time as all vehicles have adequate emission control devices.

B. Topography

There would be permanent land form changes caused by cutting and filling. There will also be drainage channel changes as a result of the proposed construction.

Forty-eight acres of land will be affected by Red Rock Drive Segment B. Additional acreages would be affected by the Crestline Scenic Drive especially between Rams-Head and La Madre Canyon. These changes would affect the aesthetics of the area.

C. Geology

It is expected that some geologic vandalism will occur.

D. Minerals

No matter what measures are taken to control its visual impacts through design of the mill site, a man-made structure will be apparent. Also, not all facilities planned along the Red Rocks Scenic Drive can be relocated to avoid the visual intrusion of the mill site.

If any of the existing mining claims in the area are found to be valid, new inholdings of private land will result along with increased mineral production and activity. Such inholdings will make planning more difficult and would also result in new traffic, air pollution and aesthetic problems as the minerals were developed.

The restriction of mineral development in the area due to its closure to new exploration and mining claims is not expected to be significant. Little has been found in the way of valuable minerals in the area aside from the generally poor grade building stone.

E. Soils and Watershed

There would be considerable soil disturbance during construction. An increase in soil erosion can be expected in some areas due to concentration of runoff from construction of roads, trails, etc. A minimum of 362 acres would be directly affected by facility construction. Additional acreages would be affected by increased use of visitors.

As for adverse impacts on watershed values, access to the Pine Creek area via Segment B of the Red Rock Scenic Drive will require development within a critical erosion rated zone. (see map 6b, page II-19).

Some surface runoff from paving of roads and campsites will occur with subsequent erosion taking place.

Such soil losses may be highly significant in light of the generally poorly developed and thin soils in the area. Any soil losses will require decades to replace under desert conditions.

F. Water

Depletion of the resource and potential for loss of the springs with secondary impacts of water deprivation upon wildlife and vegetation are impacts that may be unavoidable. The hazards of drinking contaminated water still exists no matter how well such waters are signed. Flood hazards will continue to exist throughout the area.

Loss of the springs would severely affect the plants and animals in the area. Under desert conditions it may be years before they flow again. Until they do plants and animals could not reestablish themselves in the area.

The depletion of the Las Vegas aquifer may require decades to correct.

Deaths, injuries or sickness due to floods or contaminated water are possible, significant and long term impacts.

G. Fire

Increased incidence of man-caused fires which would severely affect aesthetics, wildlife, vegetation and ecological interrelationships in addition to the human hazard can be expected. Recovery is a long-term proposition.

H. Vegetation

The vegetation on a minimum of 362 acres would be destroyed during the construction phase. Additional acreages would be disturbed by visitor use around the facilities.

This will affect wildlife by decreasing habitat and food supplies. Vegetation destroyed by construction would not be replaced. Damage due to visitor use could be repaired but only under conditions of long-term non-use.

I. Wildlife

Implementation of the proposed action will result in some loss of habitat for large animals (bighorn and deer) and many small animals such as reptiles and rodents will be displaced. Also, despite a program of visitor education about wildlife larger numbers of people will increase the danger to protected species as well as all other species.

The Crestline Scenic Drive and Brownstone Loop Road will adversely affect more than 20,000 acres of bighorn/deer habitat. The actual construction will result in loss of food and cover for wildlife. There will be cut and fill slopes difficult and impractical to revegetate. Despite warning signs animals will be killed by vehicles. Despite increases in enforcement and management of wildlife protective measures, poaching and harassment will continue. The severity of the harassment and poaching problem will be inversely related to the size and effectiveness of the ranger force.

J. Wild, Free-Roaming Horses and Burros

There will always be the increasing threat of harassment as the the Red Rocks become more developed and more people use the area.

K. Timber

Construction activities would be responsible for the removal or damage of a small portion of the timber resources in the Red Rocks.

Air pollution could significantly affect a great deal more of the resource. Seedling trampling would remain a largely unmitigated impact. Even with adequate law enforcement protection the proposed action will allow an increase in unlawful removal of timber, firewood and Christmas trees due to improved vehicular access. Because of the slow growth of these trees, years will be required for recovery.

Some vandalism could take place in remote locations.

L. Ecological Interrelationships

There may be unavoidable impacts upon the ecosystem as a result of the proposed action and the many impacts upon the components of the ecosystem. The type of impacts or their magnitudes cannot be determined at this time.

M. Archaeology and History

Regardless of the intensity of the archaeological and historical survey, the care taken to avoid destruction of sites and values, the salvage excavation completed or the thoroughness of enforcement of rules and regulations, it is inevitable there would be losses in archaeological and historical values. These losses would be in three forms:

1. The loss of scientific information due to the disruption and mixing of the various layers which represent different periods of occupation or use of the site.

2. Vandalism of archaeological sites.

3. Loss of the human interest value due to the contrasting presence of roads, trails, recreation facilities and other modern developments that destroy the integrity of the cultural value.

All of these impacts will be severe in that each site is unique. Once disturbed or vandalized it cannot be replaced or restored. The scientific cultural values of such sites will be lost for all time.

N. Las Vegas Area Land Uses

If mitigating measures are taken, there would be no unavoidable adverse impacts.

O. Red Rocks Area Land Uses

Implementation of the proposed action will unavoidably result in all of the impacts on Red Rocks Area Land Uses, page III-17. However, whether these impacts (electricity and telephone service, access roads, etc.) are considered positive or adverse would depend on one's point of view.

P. Private Inholdings and Nevada State Park System Acquisitions

Unavoidable adverse impacts of the proposed action on resources of inholdings (private and state) in the Red Rocks would be approximately the same as those on resources discussed throughout this section (i.e. adverse unavoidable impacts on air and air quality, aesthetics and recreation management, etc.).

Q. Existing Public Recreation Facilities

Road wear would be unavoidable under the proposed action.

R. Waste Disposal

There will still be scattered littering, such as gum-wrappers, cigarettes and pop-top tabs. This will affect the aesthetics the most and can be considered a chronic, long-term problem requiring continuous monitoring by the staff.

S. Recreation Opportunities

Under the proposed action, with its built-in components of regulations and visitor control, people that do not enjoy this type of recreation opportunity will probably not utilize the Red Rocks area.

T. Recreation Use

An impact that cannot be mitigated would be the increasing visitor use which could result in adverse impacts that have been covered in other sections (i.e. increased vandalism, man-caused fires, littering, etc.).

The positive aspects of increased recreation use would be significant and long-term.

U. Management

The impacts on management brought about by the proposed action, would result in increases in vandalism, injuries, traffic accidents and crime. All of these would be chronic problems requiring long-term continuing monitoring.

V. Political - type of government

There would be no adverse impacts on political (county and local) agencies other than an increase in law enforcement manpower requirements.

W. Planning

The proposed action would have no adverse impacts on local planning.

X. Zoning

A change in zoning would have to be accomplished by a majority vote of the county commissioners after adequate opportunity for the public to air its opinion.

Therefore, there would be no adverse impacts of such a decision.

Y. Social and Economic Interests and Values

No adverse actions are anticipated for the social and economic interests and values as a result of the proposed action.

Z. Aesthetics

The physical presence of buildings and other structures associated with the recreation developments would have a permanent adverse affect on the scenic values. The scars remain in from road construction and site clearing would remain for many years. The trampling of vegetation and exposing of bare soil and subsequent soil erosion would have long lasting affects on the scenic values.

The noise created by vehicular use and general play activities of recreation would have a continuing impact on the area for an indefinite period of time as would the resulting odors from vehicles.

There would be an increase in the amount of litter in the Red Rocks as a result of more people walking and driving in the area.

AA. Primitive and Natural Environmental Values

Approximately 6,200 acres of land having high primitive values would be directly or indirectly affected by the construction of roads under the proposed action. Approximately 11,424 acres would be subject to the loss of natural environmental values.

BB. Hazards

Hazards will always create a threat to humans and wildlife.

VI. RELATIONSHIP BETWEEN SHORT TERM USE AND LONG TERM PRODUCTIVITY

For purposes of discussion and analysis, "short term use" is defined as representing the developmental stage of the proposed action. During this period (which would of, necessity, be stretched over a number of years) all of the developments of the proposed action would be constructed.

"Long term" is defined as the period of time beginning with the end of construction and the existence of all developments included in the proposed action and lasting as long as the area is used and impacts are still felt. Obviously, such a time period is open-ended since visitor use at any time in the future will have its impacts and thus be a part of the long term aspects of the proposed action.

"Productivity" is defined in two different ways: the renewability of the ecosystem and its components and its capabilities to sustain the visitor use that the proposed action would create; and the enjoyment of the area and developments by man in his pursuit of recreation and happiness.

The impacts of the short term use as here defined have already been discussed in the previous sections. They include the impacts of construction necessary to permit large scale use. Some impacts upon soils, vegetation, topography, wildlife, aesthetics and other components of the ecosystem are expected and are unavoidable and irreversible except through natural processes acting over extremely long periods of time exceeding the human life span.

The long term productivity of the ecosystem is not easy to evaluate. The ecosystem has maintained itself for 10,000 years or more as indicated by archaeological evidence and if undisturbed is capable of maintaining itself indefinitely barring catastrophic climate changes or other natural phenomena.

The effects of high and continuous human use of the area may, however, be adverse. While the ecosystem is stable, it, like all desert ecosystems, is fragile. The plants and animals live their entire lives at the limit of endurance of living things. Their environment is hostile and only the strongest and best adapted can survive. Living as they do at this outer limit of survival, the plants, animals and entire ecosystem exist on the brink of disaster. One push or disruption or a series of smaller perhaps unnoticeable pushes could start the entire ecosystem into a downward spiral from which it may never recover. The proposed action and continued use of the area could represent the push or pushes needed.

To those people who enjoy the types of recreation and leisure time activities the proposed action would provide, the long term productivity of the area would be greatly increased.

Better roads, picnic sites, camping sites, trails, etc. would be considered beneficial and a means of making the area more useable. More people could use more of the area more of the time thereby increasing its productivity im terms of human activities.

Whether this productivity can be maintained for extended periods of time is uncertain. If, as suggested previously, deterioration of the ecosystem sets in or overuse or overcrowding occurs, the area may become less attractive as a place to visit. Should any of these occur productivity in terms of human activities could decline.

Some people in recent years have turned away from development-based recreation partly because of a nationwide environmental awakening; others because they have received an unsatisfactory experience from overcrowded recreational development. Some people prefer the experience of wilderness (primitive) or natural areas where there is little or no evidence of human activities. To such people the developments of the proposed action and the resulting increased numbers of people would decrease the long term productivity of the area in terms of their brand of activity and enjoyment.

If the proposed action is implemented the Red Rock area would be developed for recreational use. Eleven camping and picnicing areas having a total of 820 units would be developed. In addition about 30 miles of roads and 45 miles of trails would be constructed along with the visitor center.

These developments are expected to accommodate over 2,000 vehicles per day (8,000 people assuming four people per family car) by 1985. These facilities will allow users to enjoy a large number of recreational experiences including camping, hiking, picnicking, wildlife observation, sightseeing, horseback riding, rock climbing, rock hounding, and so on.

These facilities will be long-term developments which will result in long-term increases in recreational activities and enjoyment in the area.

Dedication of the Red Rocks to continued, long-term, high-intensity, recreational use will require to foregoing of some other resource values. Soils and plants will have to be destroyed during construction and additional damage can be expected during use. Wildlife and wildlife habitat will be disturbed or destroyed. Aesthetics will be affected by the development of the facilities and roads and the present undeveloped character changed to one of obvious human presence and activity and it will be harder to "get away from it all" in the Red Rocks. All of these values will be lost or diminished on a long-term basis.

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The terms "irreversible" and "irretrievable" have been used in two senses. The first of these is an action that can never be changed or a resource that can never be recovered. The second usage is when the action can be changed or the resource can be recovered but the change or recovery would require a period of time significantly longer than the human life span or the span of human generations.

Both types of commitments would have to be made if the proposed action were implemented.

Changes or commitments that can never be altered include:

A. Topographic changes due to construction. Such changes include leveling, cuts and fills, etc.

B. Unique plant community losses and ecological relationships that could be damaged at Pine Creek.

The Pine Creek area contains plants found nowhere else in the world. Their extinction at Pine Creek would mean their disappearance from the face of the earth. Once gone there would be absolutely no way in which these plants could be recovered or reestablished.

Because the plants themselves are unique their interrelationships with other plants and animals also must be unique. Little is known about these relationships or about the plants and their destruction would prevent forever their study.

C. Archaeological and historical sites that could be damaged during construction and by vandalism.

Once an archaeologic or historic site is disturbed most of its scientific value is lost. Any knowledge and understanding that could have been gained about previous inhabitants of the area will be lost forever.

Changes or commitments that would require a long time for recovery include:

A. Protected species that exist in the Red Rocks, such as Desert tortoise, could be transplanted or would naturally mitigate from other areas if they were lost since the Red Rocks are not the last stronghold of the species. The loss of the individual animals and their contribution to the species' gene pool are not recoverable regardless of the time span involved.

B. In areas where the surface is covered with developments, such as the visitor center and roads, soils and vegetation lost would, in time, revert to its former conditions if the developments were removed. Additionally, techniques such as scarification and transplanting could be used to accelerate this process.

C. The recreation use of the area as designated, places a social constraint on these areas. It has been socially unacceptable to convert "park land" to other uses. Therefore, it is improbable the area would be allowed to revert to some other use (such as residential expansion and mineral extraction) especially, after a use pattern develops as a result of the proposed action.

D. Depletion of the Las Vegas aquifer may require hundreds and perhaps thousands of years to rectify.

E. The loss of vegetation due to construction and use and along with it a loss of wildlife habitat would require years perhaps decades to correct.

VIII. ALTERNATIVES TO THE PROPOSED ACTION

In this section a number of alternatives to the proposed action will be described and discussed. The format of this section will follow that of the analysis of the proposed action. Impacts upon the environment will be identified, possible mitigating measures to prevent or minimize these impacts discussed, and any unavoidable effects upon the environment identified for each of the alternatives. The impacts described will be those that affect the existing environment as described in the Description of the Existing Environment section, page II-1.

Six alternatives to the proposed action will be considered and discussed. These are:

I. Full development below the escarpment, with limited development above the escarpment.

II. Limited development below and above the escarpment.

III. Full development below the escarpment and maintenance of the natural environment above the escarpment.

IV. Restriction of development to existing corridors below the escarpment and maintenance of the natural environment elsewhere.

V. No further action (utilizing the area in its present condition).

VI. Development by the Nevada State Park System.

The six alternatives to the proposed action are not the only possible alternatives. In fact, by manipulating the number of sites, the number of units per site, the location of the sites and so on, an infinite number of possible variations can be derived. The six alternatives under consideration are felt to represent a reasonable cross section of potentials. They cover many of these possibilities either by themselves or in various combinations.

"Full" development has been defined for these alternatives as meaning equal to the level of development considered in the proposed action.

A. Analysis of Alternative I

Full Development Below the Escarpment with Limited Development Above

1. Description (Alternative I)

The concept for development under Alternative I provides for a wide range of recreational developments below the escarpment and a more limited array of developments above the escarpment than are found in the proposed action. The use pattern under this alternative would be a combination of intensive and extensive recreational activities below the escarpment and primarily extensive activities above the escarpment. the area above the escarpment will be developed for vehicular access to the Rams-Head site while the remaining area will be accessible only on foot. This access pattern will serve to provide good access below the escarpment and limited access above the escarpment.

Implementation of this alternative would result in the following actions:

a. Limited development above the escarpment. This would include the following (see Map 15, page VIII-3):

(1) Road development into the Rams-Head area from the south on Highway 16, but no development of the Crestline Scenic Drive or the administrative site at Mountain Springs.

(2) Development of a visitor station on the entrance road to Rams-Head to control use, collect fees and guide and inform the public.

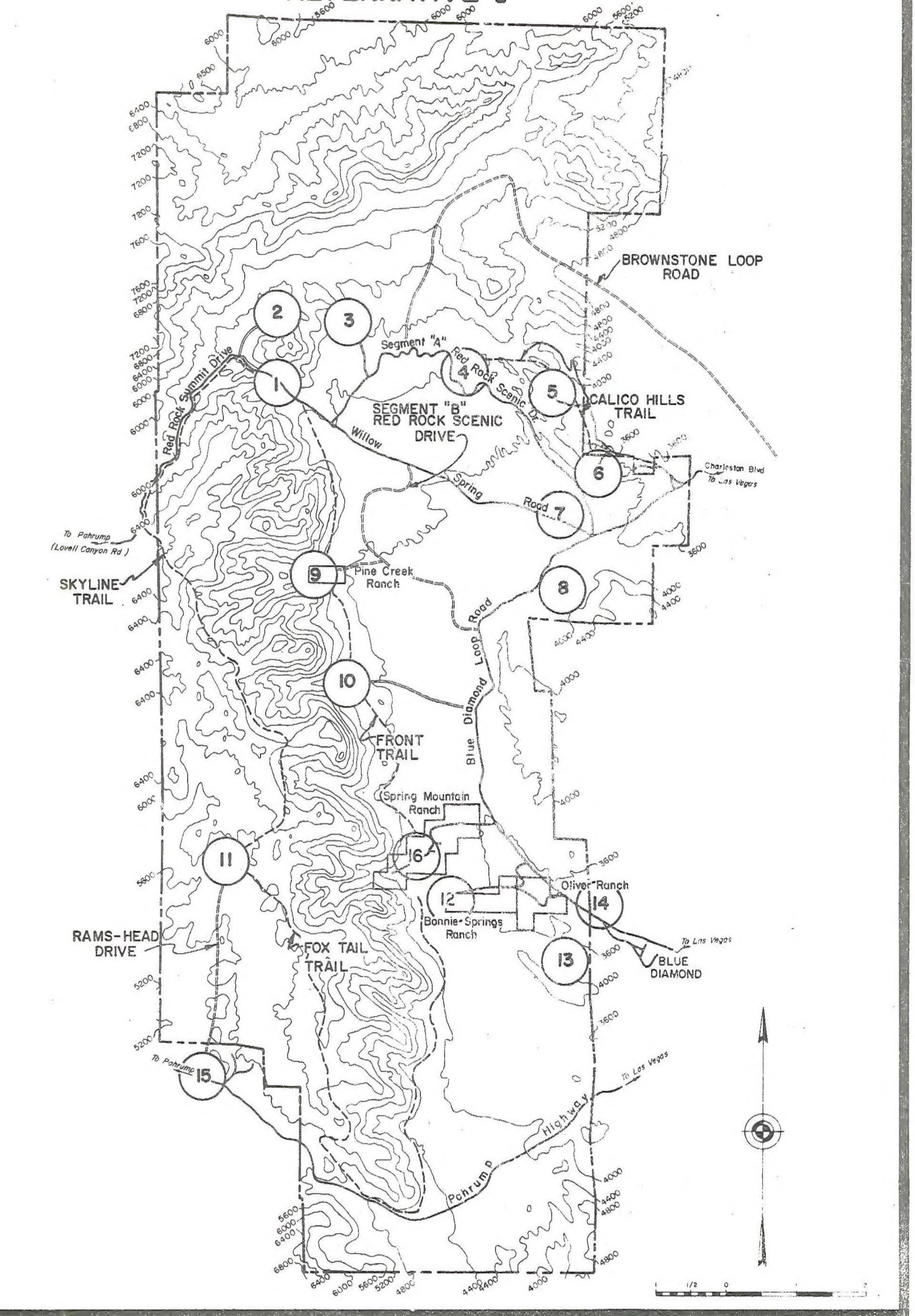
(3) Rams-Head Complex would have the same basic facilities as the proposed action but on a low density scale.

(4) La Madre Canyon development.

The road described at Rams-Head would end in the area with the Skyline Trail leading north and connecting with the La Madre Canyon facility and Foxtail Trail leading south and connecting with Highway 16 and Front Trail. The existing Red Rock Summit Drive would be closed.

b. Full development below the escarpment would include the same developments below the escarpment as under the proposed action. The following tables list the facilities considered under this alternative (Table 22); Picnicking and Camping Development Levels (Table 23); and Proposed Roads and Trails (Table 24).

ALTERNATIVE I



○ Proposed Development

1 Willow Spring (Rocky Gap)
2 La Madre Canyon
3 White Rock Spring
4 Sandstone Quarry
5 Ash Spring
6 Red Springs
7 Visitor Center
8 Blue Diamond Adm. Center
9 State Area
10 Oak Creek
11 Rams-Head
12 Commercial Area
13 Sanitary Landfill
14 Contact Station
15 Rams-Head Visitor Station
16 State Area

═══ Existing Road
═ ═ Proposed Road
------ Proposed Trail

MAP 15

TABLE 22
Alternative I Developments

Above the Escarpment*

- La Madre Canyon
  - Campground
  - Archery Range
- Rams-Head
  - Campground (Primitive)
  - Picnic Area
  - Trail Head
  - Corral
  - Viewpoint (on foot)
  - Overlook (by car)
- Mountain Spring Administrative Site
  - Contact Station
  - Housing
- Rams-Head Drive
- Skyline Trail
- Foxtail Trail

Below the Escarpment

- Sandstone Quarry
  - Picnic Area
  - Trail Head
- White Rock Spring
  - Picnic Area
  - Overlook
- Willow Spring (Rocky Gap)
  - Campground
  - Trailhead
- Lost Creek
  - Picnic Area
- Ice Box Canyon
  - Campground
- Pine Creek Ranch
  - Picnic Area
  - Trail Head
  - Guard Station
- Ash Spring
  - Picnic Area
  - Trail Head
- Red Springs
  - Picnic Area
  - Play Ground
- Oak Creek
  - Campground
  - Trail Head
  - Play Area
  - Access Road
- Visitor Center
- Blue Diamond Administrative Center
- Spring Mountain Ranch
  - Working Ranch
  - Lodge
  - Guided Tours
- ∘Sanitary Landfill
- ∘Contact Station
- Red Rock Scenic Drive Segment B
- Brownstone Loop Road
- ∘Calico Hills Trail

*The escarpment is the sandstone formation running north-south dividing the recreation lands into two elevations and use areas.

TABLE 23
Picnicking and Camping Development Levels*

Sites	Picnicking			Camping		
	Low 1/	Moderate 2/	High 3/	Primitive 4/	Standard 5/	High Density 6/
Rams-Head			X	X		
Pine Creek Ranch			X			
Ash Spring		X				
Red Springs			X			
Willow Spring (Rocky Gap)						X
White Rock Spring	X					
Sandstone Quarry			X			
Lost Creek		X				
Ice Box Canyon					X	
La Madre Canyon						X
Oak Creek						X

*Total numbers of units to be developed at individual sites will be determined through site planning techniques. Under no circumstances will the number of units at a site exceed the number shown in the proposed action. (See Table 2, page 1-6.)

1/ 8 Units/Acre
2/ 10 Units/Acre
3/ 12 Units/Acre
4/ 3 Units/Acre
5/ 4 Units/Acre
6/ 4-8 Units/Acre

TABLE 24
Proposed Roads and Trails

Roads and Trails	Standards	Approximate Length
Red Rock Scenic Drive, Segment B	24' paved surface	5.4 miles
Rams-Head Drive	24' paved surface	3 miles
Brownstone Loop Road	14' graveled surface	3.5 miles
Skyline Trail	4' width (no surfacing))	Approximate Total Length of 45 Miles
Foxtail Trail	4' width (no surfacing))	
Front Trail	4' width (no surfacing))	
Calico Hills Trail	4' width (no surfacing))	

2. Environmental Impacts (Alternative I)

This section will discuss the impacts of this alternative as if no mitigating measures are taken. Only those impacts that differ from the proposed action will be discussed; for a discussion of impacts on resources not listed here, see the impact section of the proposed action, pages III-1 to III-24.

In general, the impacts of this alternative are less severe than those of the proposed action, largely due to the elimination of the Crestline Scenic Drive from consideration. These impacts are summarized in the chart on page iv

a. Air and Air Quality

Construction dust and vehicle exhausts above the escarpment would be restricted to the Rams-Head area. Otherwise, the impacts would be those of the proposed action. Overall, the impacts would be less severe than the proposed action, since the Crestline Scenic Drive would not be built.

b. Topography

Same as the proposed action as far as the area below the escarpment is concerned. The elimination of the Crestline Drive would prevent the impacts of land form change above the escarpment due to the construction of this road.

c. Soils and Watershed

Same as the proposed action as far as the area below the escarpment is concerned. The impacts of the Crestline Drive on the soils and soil erosion potential of the area above the escarpment would be eliminated by this alternative.

Elimination of the Crestline Drive would prevent all of the impacts upon watershed due to construction of this road.

d. Water

Same as for the proposed action. Most impacts upon water involve the area below the escarpment in this alternative as well as the proposed action.

e. Fire

Less access on top of the escarpment would reduce the danger of man-caused fire in that area.

f. Vegetation

The elimination of the Crestline Drive would prevent the destruction of vegetation due to construction, disruption due to visitor use and reduction of the man-caused fire hazard. The impacts of this alternative on the vegetation below the escarpment would be the same as those of the proposed action.

g. Wildlife

Impacts on wildlife below the escarpment would be the same as for the proposed action.

Above the escarpment, however, alternative I would have far fewer adverse impacts on wildlife than the proposed action. Without the Crestline Drive or overnight camping at Rams-Head, access to 11,000 acres of important bighorn/mule deer habitat would remain limited. The result would be that less forage and cover would be destroyed; there would be less harassment and poaching of wildlife; and less chance that wildlife would be driven away from important water sources.

h. Timber

Elimination of the Crestline Drive would prevent the impacts on timber during road construction and illegal cutting due to better access. The other impacts of this alternative upon the timber above and below the escarpment would be the same as those of the proposed action.

i. Recreation Opportunities, Use and Management

Implementation of alternative I would result in the same impacts below the escarpment as with the proposed action except for the access to the La Madre Canyon site (discussed below). Above the escarpment the deletion of the Crestline Drive, limiting the Mountain Springs Administrative Site to the Rams-Head Visitor Station and the substitution of primitive camping facilities for the high density campground at Rams-Head would have several distinct impacts on the recreation opportunities, use and management aspects.

Total visitation above the escarpment would be significantly less and concentrated at the south end. The visitors would have less formal facilities oriented toward a non-mechanical recreation experience. Mechanized recreation activities such as driving for pleasure would be expected to be of very minor importance while picnicking, camping, sightseeing and hiking (nature study) would receive more emphasis. The cooler climate area would still be accessible for camping and picnicking, but on a lesser scale.

Access to the portion of the escarpment north of Rams-Head would be limited to the Skyline Trail. The impacts of providing a road for driving for pleasure in this area would be eliminated. Opportunities for a view over the escarpment to the valley below would be limited to foot and horseback. Although this would increase the enjoyment to some people, it would cause an adverse impact on those people who can't or don't care to hike but would enjoy the experience of a scenic overlook.

The Rams-Head area would still be available to the public to view the escarpment (about 1.5 miles of trail) and interpretation of the geology, archaeology, wildlife, vegetation, history, etc. would still be provided.

The quality of the hunting experience would be enhanced as the experienced hunter would have a better chance to get away from the road and people noise. The Skyline Trail would not parallel a road under alternative I so there would be an improvement in the experiences received by people using this trail to get away from mechanical noise and investigate new territory. Hikers and climbers will find access to some of their use areas is more to their liking as well as more likely to be unoccupied by other types of recreationists. The impacts of trail use would be similar to those of the proposed action.

The loss of access to La Madre Canyon from White Rock Spring (because of the elimination of the Crestline Drive) would cause traffic to go through the existing Willow Spring (Rocky Gap) site, resulting in an unsafe condition where heavy traffic would pass through the middle of a recreation development instead of ending at the site.

Less litter can be expected above the escarpment. Litter pickup and all visitor and resource protection activities (firefighting and rescue) would be more difficult in those areas above the escarpment that would be accessible only by trail or cross country hiking under alternative I.

j. Aesthetics

Impacts below the escarpment would be the same as the proposed action except there could be a slight increase in concentration of noise and air pollution in other areas as a result of the Crestline Drive being eliminated. Above the escarpment the elimination of the Crestline Drive would significantly reduce the impacts. Above the escarpment the aesthetics would not be scarred by cuts and fills of the Crestline Drive as under the proposed action. This would be a significant step toward maintaining the aesthetics (scenery) of La Madre Canyon.

Visual, noise and odor impacts would be reduced by the lower density of proposed facilities at Rams-Head.

k. Primitive and Natural Environmental Values

The impacts of alternative I on the primitive and natural environmental values would be the same as the proposed action below the escarpment and significantly lessened above. A rough estimate would place lost primitive acreages as a result of implementing alternative I at about 1,400 acres. Losses of natural environmental area would be about 6,600 acres, based on the criteria stated in the proposed action, page I-1.

3. Mitigating Measures (Alternative I)

All mitigating measures included in the proposed action are applicable to this alternative.

The public safety hazard created by routing traffic through the Willow Spring (Rocky Gap) site could be mitigated through design procedures such as speed controls, traffic barriers and signing, limiting the type of use at La Madre site, or eliminating either the La Madre or Willow Spring (Rocky Gap) site.

To lessen the impact on people who can't or don't care to hike to the major Rams-Head overlook, a trail could be built to a low gradient and paved.

The problem of more difficult litter pickup could be mitigated by initiating better public cooperative programs and increased maintenance personnel and equipment.

The difficulties of protecting visitors and resource values could be mitigated by stationing emergency equipment and clearing heli-pads at key points above the escarpment.

4. Adverse Impacts that Cannot be Avoided (Alternative I)

The adverse impacts that cannot be avoided should alternative I be implemented would be similar to those of the proposed action. These impacts would differ somewhat from the proposed action in degree but would be similar in type. These impacts include:

a. A less severe deterioration of the air quality than under the proposed action.

b. Some modification of topography due to site and road construction but not as much as the proposed action, especially above the escarpment.

c. Increased soil disturbance and erosion due to construction and use below the escarpment on the order of that of the proposed action. Above the escarpment there would be less.

d. Deterioration of some critical watersheds. This would be the same as the proposed action below the escarpment and less severe above.

e. Aggravation of a chronic water deficit condition similar in degree to the proposed action.

f. Aggravation of flood hazard conditions through facility construction and increased visitor use. Below the escarpment, this problem will be as severe as the proposed action. Above the cliffs, it would be less.

g. Destruction of vegetation due to construction and visitor use, as severe as the proposed action below the escarpment but less so above.

h. Possible destruction of the unique plant community at Pine Creek due to trampling and collection. This impact would be as severe as that of the proposed action.

i. Loss of wildlife habitat as well as increased harassment and killing of wildlife by vehicles on roads, of about the same order of magnitude below the escarpment but less severe above.

j. Harassment and possible killing of wild horses and burros by vehicles on roads. This problem will be as severe as that of the proposed action.

k. Vandalism of timber, vegetation, geologic features, archaeologic sites. This would be less of a problem above the escarpment but about the same as the proposed action below.

l. Possible impacts upon the environmental interrelationships of unknown magnitude. Fewer impacts are expected above the escarpment, however.

m. Some handicapped and elderly people will not have the opportunity to look down the escarpment to the valley below. This problem will be more severe in this alternative than in the proposed action.

n. Some deterioration of the aesthetics of the area due to littering, noise, vandalism. This would be less of a problem above the escarpment and about the same as the proposed action below.

o. Loss of primitive and natural environmental values. This would be less severe than the proposed action.

5. Relationship Between Short-Term Use and Long-Term Productivity (Alternative I)

Same as proposed action.

6. Irreversible and Irretrievable Commitments of Resources (Alternative I)

Irreversible and irretrievable commitments of resources as a result of implementation of alternative I would be substantially the same as for the proposed action.

B. Analysis of Alternative II

Limited Development Below and Above the Escarpment

1. Description (Alternative II)

Alternative II is based on a developmental concept that allows for a broad range of recreational opportunities while more fully restricting vehicular access to areas which are presently in a natural or primitive state.

Implementation of this alternative would result in the following actions:

a. Limited development above the escarpment. This would include the following: (see map 16, page VIII-12.

(1) Not building the Crestline Drive.

(2) Road development into the Rams-Head area from the south on Highway 16 with related support facilities (overlooks, picnic sites, primitive campground, and trailhead).

(3) Not building the administrative site at Mountain Springs.

(4) Development of a visitor station on the entrance to Rams-Head to control use, collect fees and guide and inform the public.

(5) Development of La Madra Canyon.

b. Limited development below the escarpment. This would include the following:

(1) Developments White Rock area, Sandstone Quarry and Red Springs.

(2) Construction of the Visitor Center and the Blue Diamond Administrative Site.

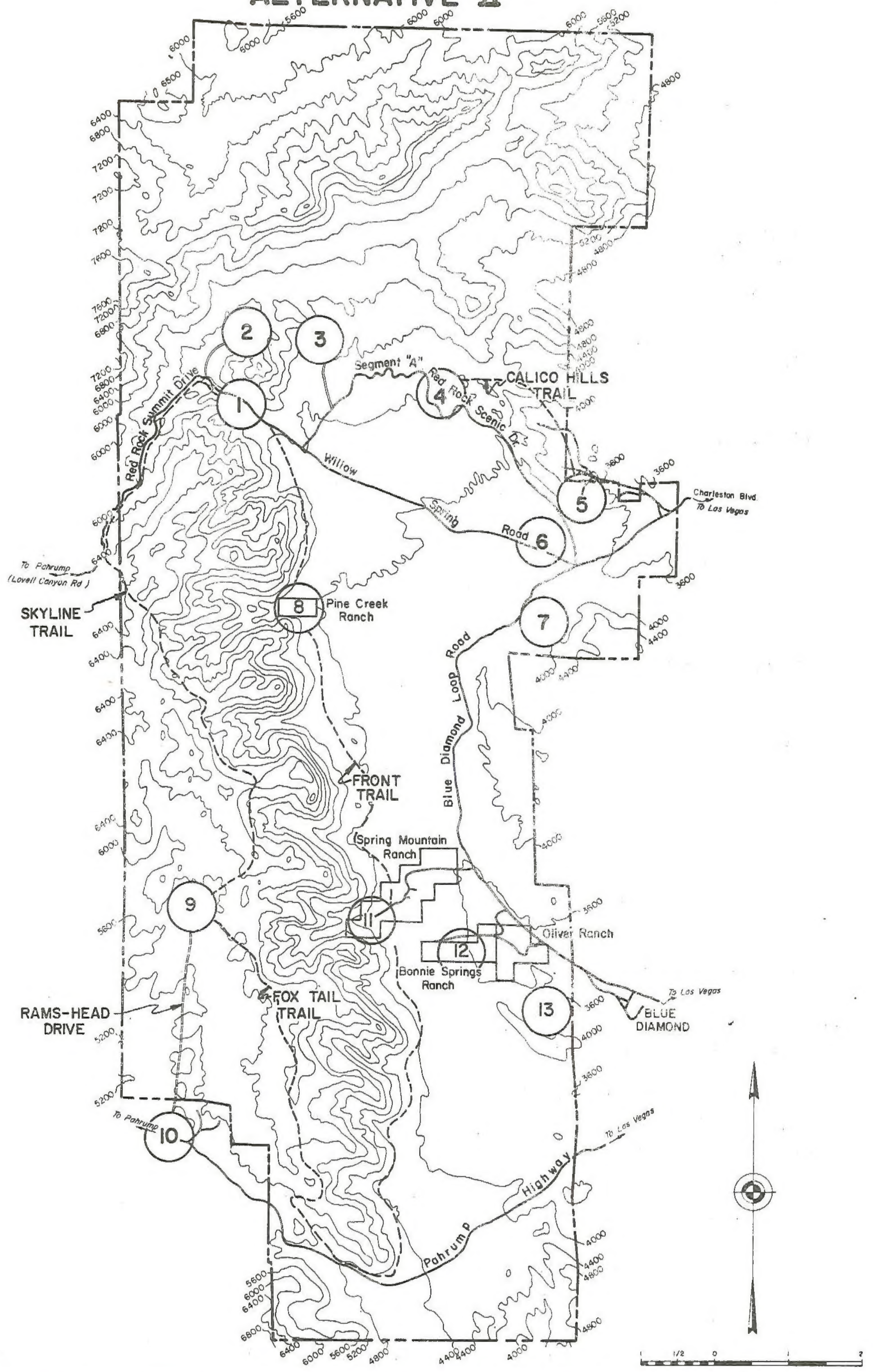
(3) Construction of Willow Springs Road to complete the loop begun by Segment A of the Red Rock Scenic Drive, thereby eliminating Segment B proposal.

(4) Construction of Front Trail, Foxtail and Skyline Trails to form a loop system above and below the escarpment.

(5) Construction of the Calico Hills Trail between Sandstone Quarry and Red Springs.

(6) Incorporating through cooperative management

ALTERNATIVE II



○ Proposed Development
1 Willow Spring (Rocky Gap)
2 La Madre Canyon
3 White Rock Spring
4 Sandstone Quarry
5 Red Springs
6 Visitor Center
7 Blue Diamond Adm. Center
8 State Area
9 Rams-Head
10 Visitor Station
11 State Area
12 Commerial Area
13 Sanitary Landfill
══════ Existing Road
══════ Proposed Road
------ Proposed Trail

MAP 16

the State properties at Pine Creek Ranch and Spring Mountain Ranch.

The road described in Rams-Head would end with the Skyline Trail leading north and connecting with the La Madre Canyon facility and the Foxtail Trail leading south connecting with Highway 16 and the Front Trail. The existing Red Rock Summit Drive would be closed.

The following tables list the facilities considered under this alternative (table 25); picnicking and camping development levels (table 26); and proposed roads and trails (table 27).

TABLE 25
Alternative II Developments

Above the Escarpment*

- La Madre Canyon
  - Campground
  - Archery Range
- Rams Head
  - Campground (Primitive)
  - Picnic Area

  - Trail Head
  - Corral
  - Viewpoint (on foot)
  - Overlook (by car)
- Visitor Station
- Rams-Head Drive
- Skyline Trail
- Foxtail Trail

Below the Escarpment

- Sandstone Quarry
  - Picnic Area
  - Trail Head
- White Rock Spring
  - Picnic Area
  - Overlook
  - Willow Springs
    - Campground Trailhead
- Pine Creek Ranch
- Red Springs
  - Picnic Area
  - Play Ground
- Visitor Center
- Blue Diamond Administrative Center
- Spring Mountain Rance
  - Working Ranch
  - Lodge
  - Guided Tours
- .Sanitary Landfill
- .Calico Hills Trail
- Front Trail
- Willow Spring Road

*The escarpment is the sandstone formation running north-south dividing the recreation lands into two elevations and use areas.

TABLE 26
Picnicking and Camping Development Levels*

Sites	Picnicking			Camping		
	Low 1/	Moderate 2/	High 3/	Primitive 4/	Standard 5/	High 6/ Density
Rams-Head			X	X		
Red Springs			X			
White Rock Spring	X					
Sandstone Quarry			X			
La Madre Canyon						

*Total numbers of units to be developed at individual sites will be determined through site planning techniques. Under no circumstances will the number of units at a site exceed the number shown in the proposed action. (see table 2, page)

1/ 8 units/acre
2/ 10 units/acre
3/ 12 units/acre
4/ 3 units/acre
5/ 4 units/acre
6/ 4-8 units/acre

TABLE 27
Proposed Roads and Trails

Roads and Trails	Standards	Approximate Length
Willow Spring Road	24' paved surface	4 miles
Rams-Head Drive	24' paved surface	3 miles
Skyline Trail	4' width (no surfacing)	Approximate Total Length of 45 miles
Foxtail Trail	4' width (no surfacing)	
Front Trail	4' width (no surfacing)	
Calico Hills Trail	4' width (no surfacing)	

2. Environmental Impacts (Alternative II)

Limiting the amount of development both above and below the escarpment would eliminate most of the impacts occurring at sites dropped in this alternative.

Only those impacts differing from those of the proposed action will be discussed in this section; for a discussion of impacts on resources not listed here see the impact section of the proposed action, pages III-1 to III-24.

In general, the impacts of this alternate would be less severe than either the proposed action or alternative I. This is due to the smaller number of facilities planned above and below the escarpment. The impacts of construction and visitor use will, therefore, be fewer in number and in many cases less significant (see chart on page iv).

a. Air and Air Quality

Benefits of alternative II as to air and air quality would include the reduction of wind-blown dust because of the reduction in the amount of vehicle exhausts in many parts of the area. On the other hand these same exhausts would be concentrated in a smaller number of areas. The existing Willow Spring Road would be paved thus cutting down dust from this source. Overall this problem would be less severe than the proposed action, but it may be more severe at individual sites.

b. Topography

Elimination of the sites mentioned previously and the elimination of the Crestline Drive, Brownstone Loop Road, and Segment B of the Scenic Drive from the plan would eliminate all of the cuts and fills, levelings, etc. that are associated with their construction. Other impacts would be similar to those of the proposed action.

c. Geology

Generally the same as the proposed action except that fewer sites and roads would mean fewer easy opportunities for geologic vandalism or rockfall accidents to occur.

d. Soils

All impacts due to construction on soils of Segment B of the Red Rock Scenic Drive, Brownstone Loop Road, the Crestline Drive, Lost Creek, Ice Box Canyon, Oak Creek, Willow Springs (Rocky Gap), and Mountain Springs administrative site would be eliminated by this alternative. Soil disturbance around those sites that would be developed would increase due to heavier use. The Willow Spring road would be paved thereby cutting down on erosion.

The effects of construction on watershed from the above mentioned three roads and five sites would be eliminated. The impacts of the sites proposed by this alternative would be similar to those of the proposed action.

e. Water

Generally similar to that of the proposed action except that sites not developed would need no water supply. Water use impacts would probably be less than for the proposed action with fewer natural springs having recreation developments along the lower edge of the escarpment. This would leave the water available for wildlife, and wild horses and burros. Elimination of some of the sites would also decrease the flood hazard to people by removing public facilities from these areas.

f. Fire

Less access both above and below the escarpment would decrease the danger of man-caused fires.

h. Vegetation

By not constructing the Crestline Drive, Brownstone Loop Road, Segment B of the Red Rock Scenic Drive, and the sites at Lost Creek, Ice Box Canyon, Oak Creek and Mountain Springs Administrative, the impacts of these developments upon the vegetation would be avoided. The elimination of Segment B would protect the unique vegetation at Pine Creek as discussed under the existing situation. Reduced access both above and below the escarpment would also lessen the danger on vegetation of man-caused fires.

i. Wildlife

Alternative II would have fewer adverse impacts on wildlife than either the proposed action or Alternative I.

The elimination of developments proposed for Lost Creek, Ice Box Canyon, Oak Creek and Willow Springs (Rocky Gap) will reduce the threat to about 2,000 acres of winter bighorn sheep habitat and to the many smaller animals displaced by such development.

The paving of the already existing Willow Spring Road would preclude the construction of a new road (Segment B) and the adverse impacts accompanying this disturbance (such as destruction of additional forage and cover, displacement of small animals, etc.).

Without the development of the Crestline Scenic Drive, Brownstone Loop Road and Red Rock Summit Roads and with the addition of a visitor station on the Rams-Head entrance road, access to the 22,000 acres of bighorn/mule deer habitat can be monitored. This control should reduce the incidence of poaching.

j. Wild Free-Roaming Horses and Burros

Alternative II will have less of an impact on wild horses and burros than either the proposed action or Alternative I. Limiting new development in the Calico Basin to picnic sites at Red Springs and developing the already existing Willow Springs Road instead of carving out the new Segment B will reduce harassment, destruction of forage and competition for water between burros and recreationists.

The other developments proposed in Alternative II will not have much adverse effect on horses or burros in the Red Rocks.

k. Timber

Elimination of the Crestline Drive would prevent the impacts upon timber of destruction during road construction and illegal cutting due to better access. The other impacts of this alternative upon the timber above the escarpment would be the same as those of the proposed action. Below the escarpment, the implementation of alternative II would result in less destruction due to construction activity. Limited access would help to reduce the wildfire hazard.

l. Ecological Interrelationships

Reduced construction and less access would eliminate some of the impacts upon the ecosystem. This is especially true of the Pine Creek area.

m. Archaeology

Elimination of the Crestline Drive, the Segment "B" Road, the Brownstone Loop Road and the Willow Spring (Rocky Gap) site would result in significant decline of the negative impacts upon the archaeologic resource. This alternative leaves the access to known archaeologic sites much as it is presently.

The construction of fewer roads and sites would decrease the possibility of disrupting unknown sites during construction.

n. Private Inholdings and Nevada State Park System Acquisitions

Under alternative II the private inholdings might receive more visitor impact as recreational demand would grow over the years. The reduced development of the Red Rock Canyon Recreation Lands would result in more instances of recreationists entering these private properties to look for additional facilities when the other public facilities were crowded on peak use days.

The Park System acquisitions could be expected to receive more visitation under this alternative than would be the case under the proposed action because of a decrease in the amount of Federal facilities being provided.

The Park System areas and the Bonnie Springs Ranch should draw a higher percentage of Red Rock visitors due to lessening development below the escarpment.

Of particular interest would be the impact on the Park System's Pine Creek Ranch under this alternative which eliminates the development of the Federal portion of the Pine Creek area. It could be expected that the lack of Federal development would lower overall visitation to this area.

o. Existing Public Recreation Facilities

The removal of the Willow Springs (Rocky Gap) site and the paving of the Willow Spring Road would be the prime impacts upon the existing public recreation facilities.

p. Recreation Opportunities, Use and Management

Implementation of Alternative II would result in numerous recreation impacts on the environment that would differ from those created by the proposed action.

Below the escarpment, there would be significantly fewer opportunities for picnicking, camping and driving for pleasure (sightseeing). Also, the opportunity for viewing a significant natural area (Pine Creek Natural Area) would probably be somewhat restricted by not developing Federal facilities at Pine Creek.

The reduction of facilities below the escarpment could result in overuse in the remaining sites. This overuse could result in serious crowding, people not finding facilities to use and degradation of the sites and overflow areas. At some time in the future, demand might physically exceed the capacities of the remaining facilities under this alternative (or any other alternative). If this was the case, it is expected recreationists would go elsewhere. The elimination of the Willow Spring (Rocky Gap) site would remove the hazard of having traffic run through a developed site as planned in Alternative I. Paving the Willow Spring road will help to make driving the Red Rock Scenic Drive more enjoyable at the same time that numerous negative impacts from the construction of Segment B would be avoided.

Above the escarpment the deletion of the Crestline Drive, downgrading the Mountain Springs Administrative Site to the Rams-Head Visitor Station and the substitution of primitive camping facilities for the high density campground at Rams-Head will have several distinct impacts on the environment which are changes from those associated with the proposed action. Total visitation above the escarpment will be significantly less. The visitors will generally be more oriented towards primitive recreation types. Mechanized recreation activities such as driving for pleasure will be expected to be of very minor importance while picnicking, camping, and hiking should be relatively more important. The cooler climate area would still be accessible for camping and picnicking, but on a lesser scale. Access to the portion of the escarpment north of Rams-Head would be limited to the Skyline Trail convenient than in the proposed action. The impacts of providing a road for driving for pleasure in this area would be eliminated. Opportunities for a view over the escarpment to the valley below would be limited to foot and horse back. The Rams-Head area would still be available to the public to view the escarpment (about 15 miles of trail) and interpretation of the geology, archaeology, history, wildlife and vegetation would be available to the public. Although this would increase the enjoyment impact on those people who can't or don't care to hike, but would enjoy the experience of a scenic overlook. The quality of the hunting experience would be enhanced as the experienced hunter would have a better chance to get away from the road and people noise. The Skyline trail would not parallel a road under alternative II so there would be an improvement in the experiences received by people using this trail to get away from mechanical noise and investigate new territory.

Hikers and climbers will find access to some of their use areas is considerably more to their liking as well as more likely to be unoccupied by other types of recreationists. The impacts of trail use would be similar to those of the proposed action.

Less litter can be expected above the escarpment. Litter pickup and all visitor and resource protection activities (firefighting, rescue) will be more difficult in those areas above and below the escarpment that would be made accessible only by trail or cross country hiking in alternative II.

r. Aesthetics

Both above and below the escarpment there would be significant reductions in impacts caused by the construction as planned in the proposed action. Major road construction would be absent. The site development impacts would be considerably lessened.

However, local impacts in the vicinity of the remaining sites could be considerably greater due to a concentration of use in these areas. The major impact of this type would be from increased automobile noise and odors. The paving of the Willow Spring road would reduce the present level of dust production caused by recreationist vehicles. Other impacts on the aesthetics would be similar to those of the proposed action.

s. Primitive and Natural Environmental Values

The impacts of alternative II on the primitive and natural environmental values would be significantly lessened both above and below the escarpment. Losses of primitive acreages would be roughly 115 acres. Losses of natural environmental area would be approximately 3,300 acres.

3. Mitigating Measures (Alternative II)

All mitigating measures included in the proposed action would still be applicable to this alternative.

Fewer facilities will be the major impact on recreation use. To mitigate this impact, a time and area use control system could be implemented. Use permits and a fee system can be a management tool to control over use and spread use seasons and peak periods to allow more people to find facilities.

Public contact and information programs can assist people in better utilization of the area.

To lessen the impact on people who can't or don't care to hike to the major Rams-Head overlook, a trail could be built to a low gradient and paved.

The problem of more difficult litter pickup could be mitigated by initiating better public cooperation programs and increased maintenance personnel and equipment.

The difficulties of protecting visitor and resource values could be mitigated by stationing emergency equipment and clearing heli-pads at key points above the escarpment.

4. Adverse Impacts that Cannot be Avoided (Alternative II)

The adverse impacts that cannot be avoided should alternative II be implemented would be similar to those of the proposed action. These impacts would differ somewhat from the proposed action in degree but would be similar in type. These impacts include:

a. A deterioration of the air quality.

b. Some modification of topography due to site and road construction.

c. Increased soil disturbance and erosion due to construction and use.

d. Deterioration of some critical watersheds.

e. Aggravation of a chronic water deficit condition.

f. Aggravation of flood hazard conditions through facility construction and increased visitor use.

g. Destruction of vegetation due to construction and visitor use.

h. Loss of wildlife habitat as well as increased harassment and killing of wildlife by vehicles on roads.

i. Harassment and possible killing of wild horses and burros by vehicles on roads.

j. Vandalism of timber, vegetation, geologic features, archaeologic sites, etc.

k. Possible impacts upon the environmental interrelationships of unknown magnitude.

l. Fewer people will be able to use Red Rocks area or facilities will be crowded.

m. Some handicapped and elderly people will not have the opportunity to look down over the escarpment to the valley below.

n. Some deterioration of the aesthetics of the area due to littering, noise, vandalism, etc.

o. Loss of primitive and natural environmental values.

The impacts that cannot be avoided would be less severe under this alternative than under the proposed action except for those impacts due to the lower level of development suggested. These impacts include the problems of crowding (l.) and less access to the elderly or handicapped (m.)

5. Relationship Between Short-Term and Long-Term Productivity (Alternative II)

Same as proposed action.

6. Irreversible and Irretrievable Commitments of Resources (Alternative II)

Irreversible and irretrievable commitments of resources as a result of implementation of alternative II would be substantially the same as for the proposed action.

C. Analysis of Alternative III

Full development below the escarpment and maintenance of the natural environment above the escarpment.

1. Description (Alternative III)

Alternative III is based on a developmental concept that allows for a broad range of recreational opportunities below the escarpment while maintaining the natural environment above the escarpment. Recreational opportunities above the escarpment would be limited to hiking, horse riding and other recreational activities that do not require structures or development. Under this alternative there would be no vehicular access to the area above the escarpment.

Implementation of this alternative would result in the following actions:

a. Full development below the escarpment. This would include the same types of developments described in the proposed action.

b. Maintenance of the natural environment above the escarpment. This would include the following: (see Map 17, page VIII-24)

(1) No structures or road development above the escarpment including the portion of the Red Rock Summit Drive now existing within the Red Rocks.

(2) The only development would be foot and horse trails. These trails would be limited to the Skyline and Foxtail Trails connecting with the Front Trail at Highway 16 and La Madre Canyon area.

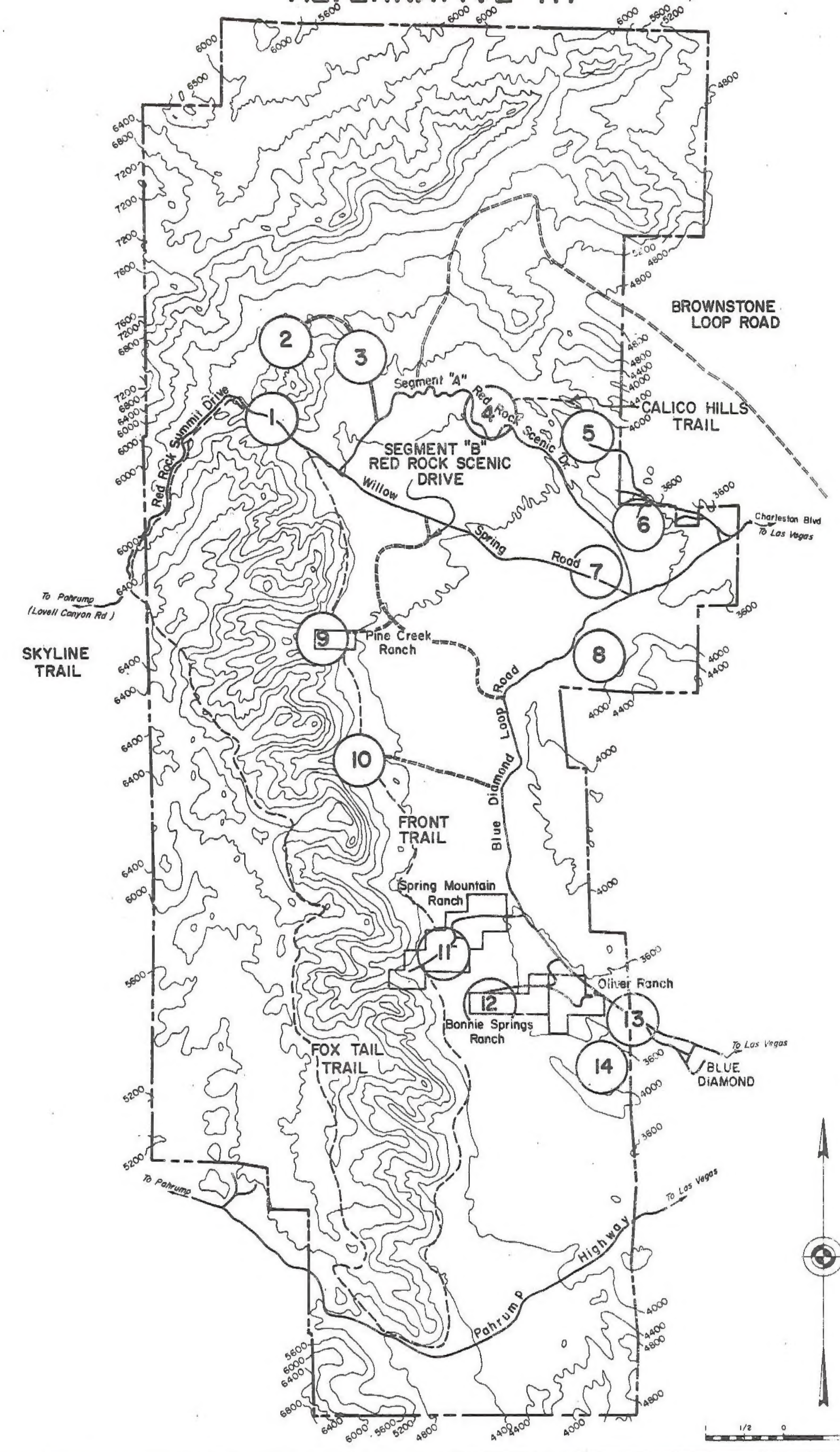
(3) Associated with these trails would be trailhead parking and primitive type sanitation facilities along the trail.

(4) Possibility of minimal type development water devices to provide potable water at various locations.

(5) Signs provided for directions and safety, with no interpretative signs.

The following tables list the facilities considered under this alternative (Table 28); picnicking and camping development levels (Table 29); and proposed trails and roads (Table 30).

ALTERNATIVE III



○ Proposed Development
1 Willow Spring (Rocky Gap)
2 La Madre Canyon
3 White Rock Spring
4 Sandstone Quarry
5 Ash Spring
6 Red Springs
7 Visitor Center
8 Blue Diamond Adm.
9 State Area
10 Oak Creek
11 State Area
12 Commercial Area
13 Contact Station
14 Sanitary Landfill

═══ Existing Road
═ ═ ═ Proposed Road
– – – Proposed Trail

MAP 17

TABLE 28

ALTERNATIVE III DEVELOPMENTS

Above the Escarpment*

- La Madre Canyon
  - Campground
  - Archery Range
- Skyline Trail
- Foxtail Trail

Below the Escarpment*

- Sandstone Quarry
  - Picnic Area
  - Trail Head
- White Rock Spring
  - Picnic Area
  - Overlook
- Willow Spring (Rocky Gap)
  - Campground
  - Trail Head
- Pine Creek Ranch
  - Picnic Area
  - Trail Head
  - Guard Station
- Ash Spring
  - Picnic Area
  - Trail Head

Below the Escarpment* (Continued)

- Red Springs
  - Picnic Area
  - Play Ground
- Oak Creek
  - Campground
  - Trail Head
  - Play Area
  - Access Road
- Visitor Center
- Blue Diamond Administrative Center
- Spring Mountain Ranch
  - Working Ranch
  - Lodge
  - Guided Tours
  - Trail Head
- Sanitary Landfill
- Contact Station
- Red Rock Scenic Drive Segment B
- Brownstone Loop Road
- Calico Hills Trail
- Front Trail

*The escarpment is the sandstone formation running north-south dividing the recreation lands into two elevations and use areas.

TABLE 29

PICNICKING AND CAMPING DEVELOPMENT LEVELS*

Sites	Picnicking			Camping		
	Low 1/	Mod 2/	High 3/	Primitive 4/	Standard 5/	High 6/ Density
Pine Creek			X			
Ash Spring		X				
Red Spring			X			
Willow Spring (Rocky Gap)						X
White Rock Spring	X					
Sandstone Quarry			X			
La Madre Canyon						X
Oak Creek						X

*Total numbers of units to be developed at individual sites will be determined through site planning techniques. Under no circumstances will the number of units at a site exceed the number shown in the proposed action (see Table 2, Page I-6).

1/ 8 Units/Acre
2/ 10 Units/Acre
3/ 12 Units/Acre
4/ 3 Units/Acre
5/ 4 Units/Acre
6/ 4-8 Units/Acre

TABLE 30

PROPOSED ROADS AND TRAILS

Roads and Trails	Standards	Approximate Length
Red Rock Scenic Drive Segment B	24' paved surface	5.4 Miles
Brownstone Loop Road	14' graveled surface	3.5 Miles
Skyline Trail	4' width (no surfacing))	Approximate Total Length Of 45 Miles
Foxtail Trail	4' width (no surfacing))	
Front Trail	4' width (no surfacing))	
Calico Hills Trail	4' width (no surfacing))	

2. Environmental Impacts (Alternative III)

This alternative is more closely related to Alternatives I and II than it is to the proposed action. It resembles the proposed action in that all developments suggested in the proposed action for the area below the escarpment would be constructed if this alternative were adopted. It differs from the proposed action in that no developments are contemplated above the escarpment. This alternative differs from Alternatives I and II in that the Rams-Head complex part of these alternatives is not included.

Since the level of development below the escarpment is the same in this alternative as it is in the proposed action and Alternative I, the impacts upon the existing environment would also be the same.

If less development is planned above the escarpment than in either the proposed action or Alternatives I or II, the impacts upon the environment would also be less severe.

In this section only those impacts that differ from those of the proposed action will be disucssed; for a discussion of impacts on resources not listed here see the impact section of the proposed action, pages III-1 to III-24.

a. Air and Air Quality

Generally, impacts would be the same as the proposed action on air and air quality except that the elimination of all developments above the escarpment would eliminate those impacts associated with construction and use above the escarpment.

b. Topography

The impacts upon topography below the escarpment would be the same as those of the proposed action. No impacts would occur above the escarpment since no construction is planned.

c. Watershed

Watersheds below the escarpment would be affected in the same ways as is described for the proposed action. No impacts would occur above the escarpment since no disruption of watersheds would occur through construction.

d. Water

The effects of this alternate upon the water resources of the area below the escarpment would be the same as those of the proposed action. The lack of construction above the escarpment would prevent any impacts upon the water in that area. The flood hazard would be the same as that of the proposed action.

e. Fire

The lack of development above the escarpment would tend to reduce the hazard of man-caused fire since fewer people would use the area. The fire hazard below the escarpment would be similar to that of the proposed action.

f. Vegetation

The impacts upon the vegetation below the escarpment would be the same as those of the proposed action. The vegetation above the escarpment would suffer few if any adverse impacts if this proposal was followed since no construction is contemplated above the escarpment.

g. Wildlife

The impacts of full development below the escarpment have already been described under proposed action.

Above the escarpment, the elimination of Crestline Scenic Drive and Rams-Head development would greatly reduce the threat of human intrusion into valuable bighorn/mule deer habitat. Poaching, harassment, forage and cover destruction, scaring wildlife away from crucial waters and the other adverse impacts discussed previously in association with these two developments would be erased. The effects of the proposed trails above the escarpment have already been discussed under impacts of the proposed action.

h. Wild Free-Roaming Horses and Burros

The lack of developments above the escarpment would have no affects on these animals since they do not range into the area above the escarpment.

i. Timber

The lack of developments and roads above the escarpment would protect the timber values in that area by restricting visitors and visitor use. The impacts below the escarpment would be similar to those of the proposed action.

j. Ecological Interrelationships

The impacts upon the ecosystem below the escarpment would be the same as those described for the proposed action. In this alternative, however, the ecosystem above the escarpment would suffer significantly fewer impacts due to developments, road construction or visitor use. It would in fact be protected as well as it possibly could without completely excluding people such as hikers, individuals and small group campers from the area.

k. Archaeological

Above the escarpment there would be few or no negative impacts upon the archaeologic resource. Below the escarpment, the impacts would be the same as the proposed action.

l. Recreation Opportunities, Use and Management

Implementation of alternative III would result in the same impacts below the escarpment as with the proposed action except for the access to the La Madre Canyon (discussed below). Above the escarpment, the deletion of all forms of development other than trails would have several significant impacts upon the environment which are changes from those associated with the proposed action. Total visitation above the escarpment will be radically less than in the proposed action. Nearly all use above the escarpment would be by hikers, horseback riders and rock climbers. Very limited camping associated with these activities can be expected.

There would be no driving for pleasure above the escarpment and consequently no impacts from this use. Sightseeing opportunities above the escarpment would be reserved for those physically able to walk to vista points and those who would be able to ride horseback into the area. Primitive recreation experiences would be strongly enhanced over those available under the proposed action.

The quality of the hunting experience would be enhanced as the experienced hunter would have a better chance to get away from the road and people noise. The Skyline Trail would not parallel a road under this alternative so there would be an improvement in the experiences received by people using this trail to get away from mechanical noise and investigate new territory. Hikers and climbers will find that access to some of their use areas is considerably more to their liking. The impacts of trail use would be similar to those of the proposed action.

The loss of access to La Madre Canyon from White Rock Spring (because of the elimination of the Crestline Drive) would cause traffic to go through the existing Willow Spring (Rocky Gap) site, resulting in an unsafe condition where heavy traffic would pass through the middle of a recreation development instead of ending at the site.

Inaccessibility above the escarpment would make litter pickup, visitor protection, search and rescue and resource protection more difficult.

m. Aesthetics

Impacts below the escarpment would be the same as the proposed action except that there could be a concentration of noise and air pollution as a result of all facilities except trails above the escarpment being eliminated.

Above the escarpment the only aesthetics impacts that might be felt as a result of alternative III being implemented would be slight dust concentrations during construction of the trail system.

n. Primitive and Natural Environmental Values

The negative impacts of alternative III on the primitive and natural environmental values would be the same as the proposed action below the escarpment and essentially eliminated above the escarpment. About 1300 acres of primitive quality land and 4500 acres of natural environmental area lands would be lost under this alternative.

3. Mitigating Measures (Alternative III)

All mitigating measures suggested for the proposed action would still be applicable to this alternative.

The public safety hazard created by routing traffic through the Willow Spring (Rocky Gap) site could be mitigated through design procedures such as speed controls, traffic barriers, and signing; limiting the type of use at La Madre site, or; eliminating either the La Madre or Willow Spring (Rocky Gap) site.

The problem of more difficult litter pick-up could be mitigated by initiation of better public cooperative programs and increased maintenance personnel and equipment.

The difficulties of protecting visitors and resource values could be mitigated by stationing emergency equipment and clearing heli-pads at key points above the escarpment.

4. Adverse Impacts that Cannot be Avoided (Alternative III)

The adverse impacts that cannot be avoided should alternative III be implemented would be similar to those of the proposed action. These impacts would differ somewhat from the proposed action in degree but would be similar in type. These impacts include:

a. A deterioration of the air quality

b. Some modification of topography due to site and road construction

c. Increased soil disturbance and erosion due to construction and use

d. Deterioration of some critical watersheds

e. Aggravation of a chronic water deficit condition

f. Aggravation of flood hazard conditions through facility construction and increased visitor use

g. Destruction of vegetation due to construction and visitor use

h. Possible destruction of the unique vegetation at Pine Creek

i. Loss of wildlife habitat as well as increased harassment and killing of wildlife by vehicles on roads

j. Harassment and possible killing of wild horses and burros by vehicles on roads

k. Vandalism of timber, vegetation, geologic features, archaeologic sites, etc.

l. Possible impacts upon the environmental interrelationships of unknown magnitude

m. Fewer people will be able to use Red Rock area

n. Some handicapped and elderly people will not have an opportunity to look down over the escarpment to the valley below

o. No facilities will be provided in the cooler climate area above the escarpment

p. Some deterioration of the aesthetics of the area due to littering, noise, vandalism, etc.

q. Loss of some primitive and natural environmental values

Most of the above impacts would be less severe under this alternative than under the proposed action. This is especially true of those impacts that affect the natural environment and its components. The impacts of decreased access to the handicapped or elderly as well as those of limited facilities would be more severe under this alternative than under the proposed action.

5. Relationship Between Short Term Use Versus Long Term Productivity

Same as proposed action.

6. Irreversible and Irretrievable Commitments of Resources

Same as proposed action.

D. Analysis of Alternative IV

Restricted development along existing corridors below the escarpment and maintenance of the natural environment elsewhere.

1. Description (Alternative IV)

This alternative represents a departure from the previously discussed alternatives which were derived from the proposed action.

The management concept behind this alternative is to maintain maximum environmental integrity in the area while providing for people use in a natural environment. Recreational facilities would be provided that would enable users to enjoy and appreciate the outstanding natural features of the Red Rocks. It would discourage intensive use of defined critical wildlife and vegetation areas and keep developments from distracting from the natural features.

Development would be limited to existing access corridors from which visitors would be able to fan out along a number of trails. Public use facilities would be away from the escarpment and the area above the escarpment and the area between the escarpment and the corridors would remain in a natural condition. Existing corridors include the Blue Diamond Loop Road and Segment A of the Red Rock Scenic Drive.

Since this alternative differs so widely from the proposed action and previous alternatives, only the broad outlines of the developments can be discussed at this time.

Detailed plans for the proposed facilities envisioned by this alternative can only be developed through a completely new master plan.

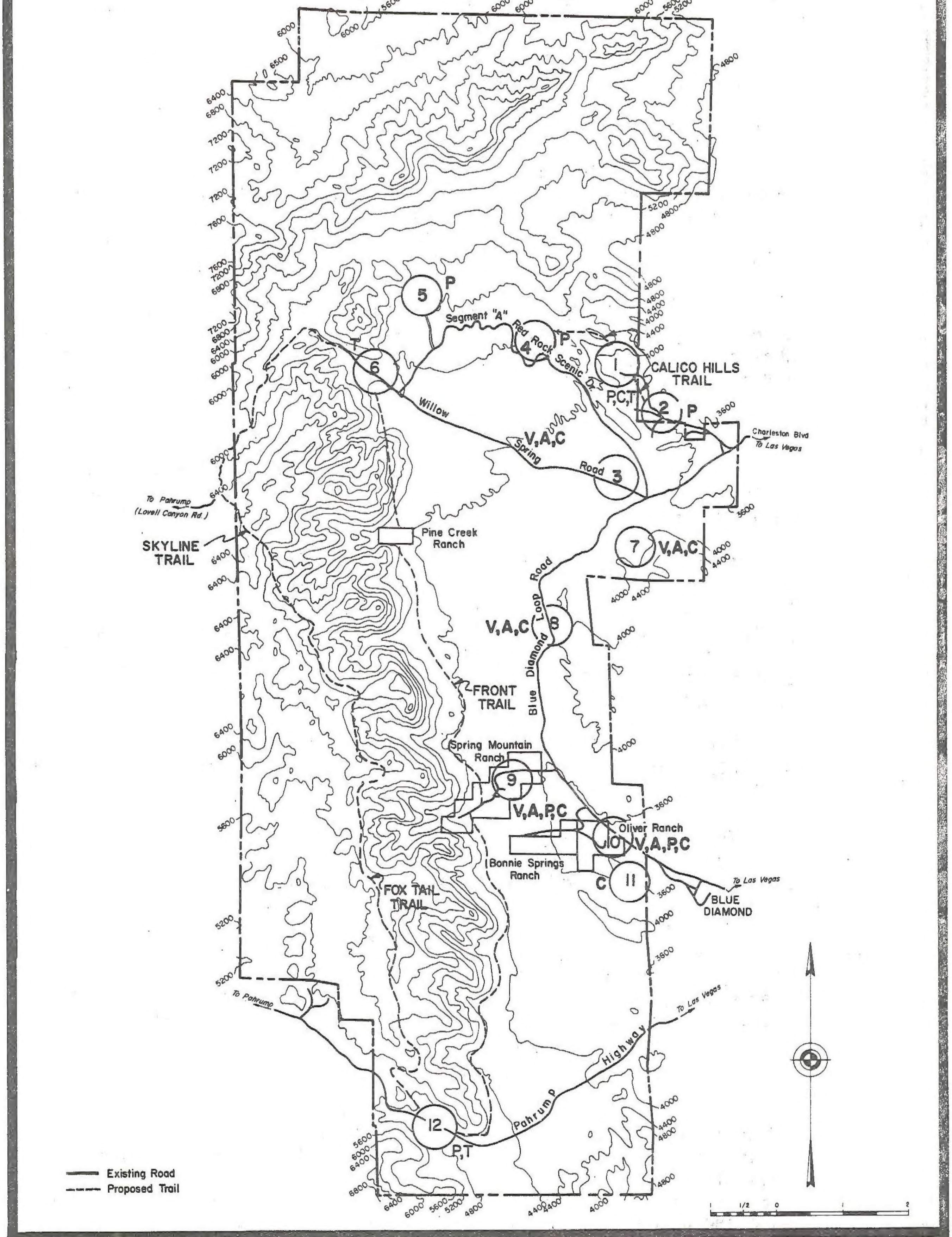
The proposed facilities developed under this alternative include a visitor center, administrative and maintenance center, picnic and camping sites, trails and trailhead facilities. All of these would be located on or near existing corridors.

Sites known to have potential for the development of such facilities are discussed on the following page and on map 18, page VIII-31. The Oliver Ranch has been included, although it is private property, since it has the potential for the development of public facilities should it ever be acquired by either the State or Federal government.

a. Visitor Center

Site as described in the proposed action. It could also be located at Spring Mountain Ranch, Oliver Ranch, "Joshua Tree", or on the site for Administrative Center in the proposed action.

ALTERNATIVE IV



○ Potential Development Site

1 Ash Spring
2 Red Springs
3 Visitor Center (Proposed of Action)
4 Sandstone Quarry
5 White Rock Spring
6 Willow Springs (Rocky Gap)
7 Administrative Site (Proposed of Action)
8 Joshua Tree
9 Spring Mountain Ranch
10 Oliver Ranch
11 Wheeler Camp Spring Site
12 Mtn. Springs

V Visitor Center
A Administrative Site
P Picnicking
C Camping
T Trail Head

MAP 18

b. Administrative Site

It could be located on any of the same sites as for the Visitor Center.

c. Picnic Sites

They could be located at Red Springs, White Rock Spring, Sandstone Quarry, Spring Mountain Ranch, Oliver Ranch and the Foxtail Trailhead (Mountain Springs).

d. Camping

Camping areas could be located at the Visitor Center site of proposed action, "Joshua Tree", Blue Diamond Loop Road near Wheeler Camp Spring, Ash Spring, Oliver Ranch, Spring Mountain Ranch and administrative site of the proposed action.

e. Trailhead

Locations for the public to park their cars for hiking the trails. These include Ash Spring, Willow Spring (Rocky Gap), Mountain Springs and perhaps others.

Access to these sites would be provided by the following: Willow Spring Road would complete the loop begun by Segment A; Spring Mountain Ranch Road would provide access to the southern public concentration point; short paved roads would be provided into the Visitor Center, Sandstone Quarry, White Rock Spring, Blue Diamond and Red Springs and trail access would be provided into the remaining areas.

The following trails would be built: Front, Skyline, Foxtail and Calico Hills. These trails are the same as those of the proposed action.

The facilities at Willow Springs would be removed, the cross country road to Pine Creek and Oak Creek would be rehabilitated, and the Red Rock Summit Road would be closed.

The levels of development at picnic and camping sites as envisioned by this alternative would be in the low to moderate range, (i.e. 8 to 10 picnic units per acre and 3 to 4 camping units per acre, respectively). Generally, picnicking and camping sites would be developed in small groupings consisting of up to 10 units.

2. Environmental Impacts (Alternative IV)

This alternative represents maximum protection of the natural environment and a concentration of development and use in areas already been affected by human activites. The impacts of this alternative upon the environment, while similar to those of the proposed action and previous alternatives, would be concentrated in a few areas rather than spread throughout the Red Rocks area.

Impacts due to the Crestline Drive, Rams-Head complex and many of the other picnic and campsites would not occur since these developments would not be constructed.

Only those impacts that differ markedly from those of the proposed action will be discussed; for a discussion of impacts on resources not listed here see impact section of the proposed action, page III-1.

a. Air and Air Quality

Vehicle exhausts and noise would be limited to a relatively small number of sites. This would protect the rest of the area from these pollutants but would raise concentrations in the vicinity of the developments. The levels that would be reached are unknown at this time. If one particular site, such as the Spring Mountain Ranch was used for all or several of the uses suggested the impacts upon air quality would be greatest there, and other possible sites would be affected proportionately less.

b. Topography

Very few impacts on topography would occur under this alternative. These would be largely confined to land leveling and grading at developments. The exclusion of the Crestline Drive and Segment B of the Scenic Drive would prevent all of the impacts due to construction of these roads including the large scale cut and fills.

c. Geology

Vandalism would be largely confined to a few sites rather than spread throughout the area as it would under the proposed action. Accidents would also be more or less confined to a few areas, although their incidence may increase due to larger concentrations of people.

d. Soils and Watershed

Soil disturbance, increased soil erosion, etc. would be restricted to only a few areas, while the rest of the area would remain undisturbed. The impacts upon soils at these sites may be more severe because of the use these areas will have to endure.

Most watersheds would be protected and suffer no impacts. Watersheds near developments can be expected to receive heavy use.

e. Water

Water consumption would probably be the same as the proposed action but would be concentrated at fewer developed sites. This concentration of water demand would require additional wells at or near these developments or the construction of pipelines to bring water to the sites from other areas.

However, the lack of developments at every spring would protect these springs for wildlife use, as well as preserve the riparian and semi-aquatic vegetation from large numbers of people. The danger of the springs drying up due to water well pumping would also be lessened.

Hazards due to flooding and drinking water would also be lessened by limiting the number of people who use the canyons and spring areas where such risks are highest.

f. Fire

The danger of fires man-caused would be appreciably decreased by limiting people to small areas outside of the more fire-prone sites. Fires that do start in or near the developments would be easier to spot and control.

g. Vegetation

Limiting people to a few areas can be expected to cause severe impacts upon the vegetation in and around the developments both through removal during construction and by continuous heavy use by people. However, the majority of the plants in the overall area would remain relatively unaffected. Pine Creek natural area and Lone Pine which contain unique plant communities would probably receive the maximum protection possible barring complete exclusion of people from the Red Rock area.

h. Wildlife

From the wildlife viewpoint, alternative IV would have the least impact of any of the alternatives. Only already existing sites (Red Springs, Sandstone Quarry, Blue Diamond, Spring Mountain Ranch) would be developed and most would be developed to a moderate extent (only a small number of picnic units at Red Spring and Sandstone Quarry).

The developments at Sandstone Quarry and Red Springs would have a minimal effect on most species of wildlife. Most species intolerant of human interference have already abandoned these sites because of present use. By concentrating development at these two sites the other waters in the area (Calico Spring, Ash Spring) would be made available exclusively to wildlife.

Establishing extensive camping and picnic sites at Blue Diamond and Spring Mountain Ranch would concentrate people at the eastern fringe of the Red Rock area, leaving Oak and Pine Creeks, Ice Box Canyon, Willow and La Madre Springs, the escarpment and the La Madre Range undisturbed for wildlife.

Undoubtedly some wildlife would be killed along the 6 1/4 miles of new roads proposed in alternative IV. But there would be far less damage to animals and their habitat than the Crestline, Brownstone Loop and Segment B roads suggested in the proposed action (38 1/2 miles) would create.

The impacts of the proposed trails have already been discussed under the proposed action.

i. Wild, Free-Roaming Horse and Burros

Alternative IV may have some effect on burros that inhabit the eastern edge of the Red Rock Recreation Area near Red Springs, Blue Diamond and the Spring Mountain Ranch. Alternative IV would increase human activities in these areas. This may result in increased harassment and killing of burros on roads by vehicles and more competition for water between burros and recreationists.

With no Crestline Drive, the threat of harassment to horses and burros along the southern and Lovell Canyon edges of the Red Rocks will be reduced.

j. Timber

As with vegetation, timber would receive maximum protection under this alternative due to the exclusion of large numbers of people from areas in which it occurs. There is no timber at the sites proposed for development by this alternative and thus no impacts upon timber.

k. Ecological Interrelationships

The maximum protection aspects of this alternative which would decrease the number and magnitude of any adverse impacts upon the various components of the ecosystem would also maximize the protection afforded to the entire ecosystem. Some losses will undoubtedly occur as a result of construction and use but these would not be as severe as they would be for the proposed action.

l. Archaeology

The implementation of alternative IV would result in significantly greater protection for known archaeological sites than would be the case under the proposed action. In fact, the protection under this alternative would be an improvement of that available under the existing situation. This improvement would come as a result of the obliteration of roads and facilities along Red Rock Wash above the existing intersection of the Willow Spring Road and the Red Rock Scenic Drive Segment "A".

This would serve to protect the archaeological resources in the vicinity of the Willow Spring (Rocky Gap) site. The deletion of access to Brownstone Canyon and the elimination of developments above the escarpment will likewise aid in protecting archaeological resources. Construction and use of the planned facilities could adversely affect unknown archaeological resources as is the case with the proposed action.

m. Red Rocks Area Land Use

The impacts under this alternative would be similar to those under the proposed action with the exception of the possibility that utility rights-of-way could be lengthened or rerouted dependent upon the locations selected for the Visitor Center and Administrative Center.

n. Private Inholdings and Nevada State Park System Aquisitions

Implementation of this alternative will result in impacts on private inholdings similar to those of the proposed action. Impacts upon the State acquisitions could differ significantly from those of the proposed action. This alternative considers the use of the Spring Mountain Ranch as a potential site for the Visitor Center; the Administrative Center; a picnic site; a camping site; or a combination of these. The Pine Creek Ranch would be returned to its natural environmental state under this alternative.

The Spring Mountain Ranch is considered by the Las Vegas District, BLM staff to be physically capable of accommodating any or all of the above developments. The Park System is of the opinion that these developments could better be located in alternative locations. In the event that the Spring Mountain Ranch was selected as the site for all of these developments, it is probable that the present Park System plan of running the ranch as a "working ranch" would have to be abandoned. Furthermore, these developments would tend to occupy a major portion of the total available land base and seriously modify the character of the existing landscape. It is unlikely that the Spring Mountain Ranch would be chosen for all four types of uses, but if it was, the impacts of visitor use, vehicle traffic, etc., would be exceptionally destructive to the existing environment of the ranch. Much more likely would be the selection of the ranch for one or possibly two of these uses.

Construction impacts would be commensurate with the facilities proposed. If the Visitor Center were to be at Spring Mountain Ranch, large numbers of visitors would be expected to enter the ranch. Their presence would result in all of the impacts associated with heavy visitation as discussed in the proposed action. Camping and/or picnicking facilities would have impacts similar to those discussed for like facilities in the proposed action. The use of Spring Mountain Ranch for the Administrative Site would result in increased truck and heavy equipment traffic on the ranch property and would separate administrative functions and facilities from visitor areas.

The major impact of alternative IV on the Pine Creek Ranch would be that no development would be planned and the the entire area would be allowed to revert to its natural state. No firm plans for the development of Pine Creek Ranch have been proposed by the Park System as of this writing. It is possible that the no-development proposal of this alternative would conflict with the Park System's development plans for the Pine Creek Ranch.

o. Existing Public Recreation Facilities

Implementation of alternative IV would result in a number of significant impacts upon the existing public recreation facilities. The Red Rock Summit Road, Willow Spring Road north of its interestion with Red Rock Scenic Drive and the Willow Spring (Rocky Gap) site would all be removed and returned to their natural states. These removals would considerably lessen the accessability and therefore, visitor use to the existing site at Lost Creek, Icebox Canyon, La Madre Canyon and Lone Pine. Additionally, the access roads to Oak Creek, Pine Creek Natural Area and First Creek would be deleted and allowed to return to their natural state. If deemed feasible, the access road between the Blue Diamond Loop Road and the Pine Creek Ranch would also be leiminated and returned to its natural state.

Expanded roles for Sandstone Quarry, Red Springs, White Rock Spring, the Spring Mountain Ranch, the Blue Diamond Administrative Site and and Foxtail Trailhead would all be considered under this alternative. The remaining portion of the Willow Spring Road would be paved to complete the Red Rock Scenic Drive.

p. Recreation Opportunities, Use and Management

Recreation opportunities above the escarpment would consist almost entirely of hiking, horseback riding and rock climbing. Limited camping use would occur in connection with these activities. No opportunities for mechanized forms of recreation would exist above the escarpment. Sightseeing opportunities above the escarpment would be reserved for those physically able to walk to vista points and those who were financially able to ride horseback into the area. Primitive recreation experiences above the escarpment would be strongly enhanced over those available under the proposed action.

Below the escarpment the types of available opportunities would be similar to those available under the proposed action. The sites at which these activities occur are different, but in most cases the total designed recreational capacity for the specific recreational activity would remain about the same. The sightseeing activity is the main exception to this. There would be less opportunity to sightseeing by automobile under this alternative than under the proposed action.

Total visitation to the Red Rock Canyon Recreation Lands could be expected to be less than under the proposed action. The vast majority of the area's visitors would likely visit only the area below the escarpment.

Inaccessibility above and below the escarpment would make litter pickup, visitor protection, search and rescue and general resource protection more difficult. It would, however, keep most people out of the back county, thereby making it easier to supervise them.

The locations of the various facilities would have much to do with the ability of area's protection and maintenance staff to adequately manage the area resources. For example, placing the Administrative Center at the Spring Mountain Ranch would have the effect of removing the management personnel from the northern portion of the area, where the majority of the visitors would be expected to be recreating. Likewise, locating the Visitor Center at the Joshua Tree site or the Spring Mountain Ranch would tend to draw recreationist traffic from the northern portion of the area down to the southern portion. If this were to be the situation and the Administrative Center was to be located at the Blue Diamond Site, the protection and maintenance staffs would once again be widely separated from the recreational users.

The impacts of trail use would be similar to those of the proposed action.

Other impacts upon the management of the Red Rocks would be expected to be similar to those found in the proposed action.

q. Aesthetics

Above the escarpment the only aesthetics impacts that might be felt as a result of alternative IV being implemented would be slight dust concentrations during construction of the trail system. Below the escarpment, the impacts would be significantly less than the proposed action due to the reduced level of facility construction. Local deterioration of the aesthetics could be expected wherever facilities were constructed. These aesthetic impacts would be of the types discussed under the proposed action.

r. Primitive and Natural Environmental Values

The negative impacts of alternative IV on the primitive and natural environmental values would be essentially eliminated above the escarpment and significantly lower than the proposed action below the escarpment. This alternative is considered to be the least harmful of any of the alternatives in terms of the primitive and natural environmental values. The maximum acreages of primitive and natural environmental areas consistent with a multiple recreational development philosophy, are conserved under alternative IV.

s. Planning

The adoption of this alternative would require the development of a new master plan since it is not based upon the old one in any way other than the use of a few sites identified in the old master plan. Additional time, money and manpower on the part of the BLM and Nevada State Park System would be required to develop a new master plan.

3. Possible Mitigating Measures (Alternative IV)

Measures that could be taken to mitigate the impacts of this alternative would be by and large the same as those of the proposed action. However, because of the number of possible developments that could occur upon or near areas under the Park System's jurisdiction, it is imperative that all phases of design, construction and management be closely coordinated with the Park System staff during the development of the master plan.

4. Adverse Impacts that Cannot Be Avoided (Alternative IV)

The adverse impacts that cannot be avoided should alternative IV be implemented would be similar to those of the proposed action. These impacts would differ somewhat from the proposed action in degree but would be similar in type. These impacts include:

a. A deterioration of the air quality.

b. Some modification of topography due to site and road construction.

c. Increased soil disturbance and erosion due to construction and use.

d. Deterioration of some critical watersheds.

e. Aggravation of a chronic water deficit condition.

f. Aggravation of flood hazard conditions through facility construction and increased visitor use.

g. Destruction of vegetation due to construction and visitor use.

h. Loss of wildlife habitat as well as increased harassment and killing of wildlife by automobiles on roads.

i. Harassment and possible killing of wild horses and burros by automobiles on roads.

j. Vandalism of timber, vegetation, geologic features, archaeological sites, etc.

k. Possible impacts upon the environmental interrelationships of unknown magnitude.

l. Some deterioration of the aesthetics of the area due to littering, noise, vandalism, etc.

m. Additional time, money and manpower would have to be devoted to the development of a new master plan.

5. Relationship Between Short Term Use and Long Term Productivity

Same as proposed action.

6. Irreversible and irretrievable commitments of resources as a result of implementation of alternative IV would be substantially the same as for the proposed action.

E. Analysis of Alternative V

No Further Action (utilize the area in its present condition).

1. Description (Alternative V)

This alternative envisions the continued use of the Red Rocks area in its present state. No new developments would be constructed. Existing developments would be maintained but would not be improved. Existing developments are shown on Table 15, page II-51 and are discussed in the Description of the Existing Environment section of this statement.

It is assumed that natural and cultural forces would continue to act upon the area. Included in these cultural forces would be increased recreational use of the area.

2. Environmental Impacts (Alternative V)

Only those impacts that differ from the proposed action will be discussed; for a discussion of impacts on resources not listed here, see impact section of the proposed action, page III-1.

a. Air and Air Quality

Essentially the same as the proposed action except that it would be concentrated around existing facilities and along existing roads.

b. Topography

No impacts are anticipated.

c. Geology

Continued vandalism would occur. Accidents would be of about the same frequency as for the proposed action.

d. Soils and Watershed

The lack of construction would leave much of the soil cover intact. Disturbance would become severe around the existing facilities and along the existing roads.

Most impacts upon watersheds are the result of construction. With no construction planned under this alternative impacts would be negligible.

e. Water

Although the demand for water would increase with increased visitor use, no new developments to meet this need for additional water are contemplated. The impacts associated with water removal would be minimized under this proposal. The hazards involved in flooding and drinking unsafe water would be the same as those of the proposed action.

f. Fire

The danger of man-caused fires would probably increase due to increased visitor use of campfires throughout the area.

g. Vegetation

The impacts upon vegetation would probably be the same as the proposed action in terms of trampling, cutting, collecting, etc. The impacts due to construction would obviously not occur if this alternative was followed. The danger of man-caused fires could increase.

h. Wildlife

In the short run, alternative V would be beneficial to wildlife. With no construction of picnic and camping sites, roads and trails, there would be no loss of forage and cover.

But there would be adverse impacts in the future. As the population of nearby Las Vegas increases, use of the Red Rock area would increase whether new developments are constructed or not. Without some management planning, indiscriminate hiking, camping and off-road vehicle traffic would drive animals from waters and lead to trampling of important cover and vegetation. An increase in poaching and harassment and the subsequent abandonment of many areas by species intolerant of human intrusions would also occur.

i. Wild Free-Roaming Horses and Burros

Under alternative V the uncontrolled, large numbers of people who would be using the Red Rocks in the future would have the same impacts on wild horses and burros that they would on wildlife (more competition for water, trampling of forage, harassment, etc.)

j. Timber

As visitor use builds up over the years, visitors to the Red Rocks would be responsible for increased vegetative trampling, pollution and timber trespass impacts upon the timber. It is unlikely that these slowly increasing impacts would ever reach the same level as under the proposed action because no improvements in access to the more remote portions of the Red Rocks are to be considered under this alternative.

k. Archaeology

Increasing visitor use would result in an increasing incidence of archaeologic vandalism over the years. The known archaeologic resources in the vicinity of the Willow Spring (Rocky Gap) site and Brownstone Canyon would continue to be focal points for archaeological impacts.

l. Las Vegas Area Land Uses

Would not change the existing situation.

m. Red Rock Area Land Uses

Would not change the existing situation.

n. Private Inholdings and Nevada State Park System Acquisitions

Would not change the existing situation.

o. Existing Public Recreation Facilities

Over time, the existing public recreation facilities would be subject to accelerating deterioration. Increasing visitor use coupled with only normal maintenance would lead to the point where these facilities will begin to wear out.

p. Recreation Opportunities, Use and Management

Under alternative V the opportunities for recreation would be the same as shown under Section III, Description of the Existing Environment, page II-53. As visitation slowly increased, each of the existing use sites would, in turn, become used to capacity. The possibility of sites being overused and consequently damaged does exist.

As site use reached capacity there would of necessity be a shift toward activities that are not necessarily site-oriented. It is probable that general sightseeing and driving for pleasure would become relatively more predominant than is now the case. The ability of the Red Rock Canyon Recreation Lands to satisfy the rapidly growing recreational demands of the people of southern Nevada would be severely limited under this alternative. Total use above the escarpment would be expected to be significantly lower than in the proposed action while visitation below the escarpment would be only slightly lower than in the proposed action.

Vandalism, litter, traffic accidents, and major crime are all likely to slowly increase in proportion to increases in visitation. It should be noted that such problems should be less in remote areas under this alternative than they would be under the proposed action.

The workload for the existing protection and maintenance force could be expected to slowly increase for several years and then begin to more rapidly increase as the existing facilities required major maintenance at the same time the visitation was continuing to rise. At some point the management of the Red Rocks would begin to deteriorate unless mitigating measures are taken.

q. Aesthetics

Alternative V would result in only slight aesthetic impacts at the time of implementation. The major aesthetic impacts would come as the existing sites became more crowded. The facilities would visibly deteriorate, vegetation at these sites would disappear, vehicle traffic would bring increased noise and air pollution and increasing areas would be affected by the "spillover" of recreationists from the developed sites. In the undeveloped areas, particularly those that are inaccessible by motorized vehicles, the aesthetic values would be only slightly affected. Prime impacts in these areas would be from littering.

r. Primitive and Natural Environmental Values

Increasing visitation to the Red Rocks would result in slow deterioration of primitive and natural environmental values in the vicinity of the existing roads. It is believed that the impacts on these values, given significant visitation increases, would remain only slight. Technological improvements to off-road vehicles or a relaxing of current prohibitions on the use of off-road vehicles within the Red Rocks might result in further losses. The losses in primitive and natural environmental values under this alternative would be considerably less than those expected under the proposed action.

3. Possible Mitigating Measures (Alternative V)

Any mitigating measures that could be taken to prevent the impacts of this alternative from occurring, or to minimize such impacts, implies some sort of action. Since this alternative specifically contemplates no action other than maintenance of existing facilities, no mitigating measures are possible.

4. Adverse Impacts that Cannot be Avoided

Under a complete "No Action" alternative, such as this one, all impacts would occur and, since no mitigating measures would be taken, all of the impacts shown under the impacts section of this alternative, (beginning on page VIII-32) would be unavoidable.

5. Relationship Between Short Term Use and Long Term Productivity

In this alternative there would be no way to distinguish between short term and long term use and productivity. The present situation would continue and become worse as increased visitor use puts heavier pressure on the area and existing developments and as these developments wear out. This increased use would lead to a slow (or not so slow) deterioration of the long term productivity.

6. Irreversible and Irretrievable Commitments of Resources

A "No Action" alternative would commit all of the resources within the Red Rocks to a progressive deterioration. Many of these commitments would not be irreversible in that if some action was taken at a later date then could be saved or helped to recover. Some resources such as archaeologic sites and unique vegetative types would be lost forever and no amount of future action would reverse these losses or retrieve these values.

F. Analysis of Alternative VI

Development by the Nevada State Park System

1. Description (Alternative VI)

This alternative contemplates the transfer of the Red Rock Canyon Recreation Lands to the State of Nevada and its development by the Nevada State Park System as a State Park.

Other agencies such as the National Park Service, the Clark County Parks and Recreation Department and private owner-managers were not considered as viable alternatives to BLM or Nevada State Park administration. The National Park Service has stated that the Red Rock Canyon Recreation Lands do not meet the requirements for inclusion into the National Park System, and neither the Clark County Parks and Recreation Department nor any private groups have indicated any interest in acquiring these lands.

The Park System has entered into a cooperative agreement with the BLM and presently the two entities have joint management of the Red Rock area. As previously noted the Nevada State Park System has become one of the larger land owners within the Red Rocks area with the acquisition of the Spring Mountain Ranch and Pine Creek Ranch properties.

The Nevada Legislature passed Resolution AJR-9 in 1973, recommending the Park System acquire the area. Several bills are presently pending in Congress which would transfer these lands to the State of Nevada.

The administrator of the Park System has indicated that if they were to acquire the Red Rock area the proposed developments would be based upon the guidelines developed by this impact statement and the public comments concerning the Red Rocks.

2. Environmental Impacts (Alternative VI)

Development of the Red Rocks by any agency would have certain impacts upon the environment as a result of construction, visitor use, etc. These impacts would vary in severity depending upon the type and size of the developments and how much use they get. Since these types of impacts have been discussed for the proposed action and previous alternatives, only those impacts that are more or less unique to Park System status will be discussed here. These impacts include:

a. The transfer of 64,000 acres of national resource lands to the State of Nevada.

b. Designation of the Red Rocks as a Nevada State Park.

c. The removal of the wild horses and burros by BLM at the request of the Park System or the negotiation of a cooperative agreement between the two entities for the management of these animals on State lands. This may also require that the Park System obtain a permit from BLM to keep the horses on non-Federal lands.

d. Improved visitor and resource protection would be an impact resulting from the law enforcement authority possessed by Park System personnel. This authority would allow more effective overall management. The BLM's authority for law enforcement is currently included in versions of the National Resource Lands Management Act being considered by Congress.

e. The possibility exists that no oil and gas or other mineral leasing or sales would occur in the area.

3. Possible Mitigating Measures (Alternative VI)

The only possible mitigating measures that could be taken should this alternative be adopted would be to closely coordinate with the Park System to ensure that an orderly transfer of the land and responsibility took place, and that the mineral and wild horse and burro problems be resolved.

In the event that transfer occurs under an authority allowing inclusion of stipulations in the grant, such stipulations could be used to mitigate the impacts of this action. These stipulations might include mitigating measures dealing with the impacts of construction and visitor use, that have been discussed for the proposed action and other alternatives.

4. Adverse Impacts that Cannot be Avoided (Alternative VI)

The adverse impacts of construction or visitor use that will occur and cannot be mitigated regardless of the agency involved have been discussed in the proposed action and other alternatives.

5. Irreversible and Irretrievable Commitments of Resources

Any irreversible and irretrievable commitments of resources that depend upon the mode or level of development would be the same as the proposed action or one of the other alternatives if this alternative were adopted. The transfer of 64,000 acres to the State of Nevada may be an irreversible and irretrievable commitment of the land and its resources, depending upon the mode of transfer.

IX. CONSULTATION AND COORDINATION WITH OTHERS

A. Consultation and Coordination in the Development of the Proposed Action

1. March 21, 1964 - National Public Lands Task Force prepared and submitted a report entitled "Red Rock Canyon - A National Landmark Study". This report is included as Appendix D of the draft impact statement hearing record.

2. June 9, 1964 - A meeting was held at the Thunderbird Hotel to discuss a plan for the Red Rocks. A working committee was organized at this meeting.

3. September 1964 - Questionnaires (see following page) on future development and management of the Red Rock area were published in newspapers and distributed to the public by various groups, including the Sierra Club and the League of Women Voters. A total of 3,500 questionnaires were returned, and of these, 90 percent were in favor of recreation development of some type in the Las Vegas area. (See Public Involvement and Legislative Action Section of the description of the proposed action, p. I-13 for summary of results.)

4. March 1, 1965 - The working committee after reviewing the results of the questionnaires submitted their report. The following is a summary of their recommendations:

   a. The Bureau of Land Management is the logical agency to administer, develop and maintain the recreation resource of the Spring Mountains Planning Unit (containing the Red Rock Canyon Area).

   b. The planning unit has scenic, scientific and historic values of significance to the entire nation.

   c. Recreation complex boundaries will not be established until the recreation inventory is complete.

   d. Drilled wells should be planned for future recreation sites to enhance the recreation values and increase water for wildlife.

   e. The Bureau of Land Management should acquire the necessary water rights for utilization and development of the recreation and wildlife resources.

RECREATIONAL SURVEY

by the Provisional League of Women Voters of Las Vegas Valley

In Cooperation With
U.S. Department of the Interior
Bureau of Land Management

Age of Person Completing questionnaire: Under 20__; 21-35__; 36-50__; Over 50__

TOTAL SIZE OF FAMILY: 1__2__3__4__5__6__7__8 or more__

HOW LONG HAVE YOU LIVED IN CLARK COUNTY?
Less than one year___, 1-4 years___, 5-10 years___, more than 10___

APPROXIMATELY HOW MANY TIMES PER YEAR DOES YOUR FAMILY USE THE FOLLOWING RECREATIONAL FACILITIES AT LOCAL AREAS SUCH AS: MT. CHARLESTON, VALLEY OF FIRE, LAKE MEAD, AND SIMILAR LOCATIONS?

	0 Times	1-4	5-10	10 or more
Picnic facilities				
Campground				
Trailer campground				
Hiking trails				
Playground facilities				
Horseback riding facilities				

DO YOU FEEL ADDITIONAL RECREATIONAL FACILITIES OF THIS NATURE ARE NEEDED IN AND AROUND THE LAS VEGAS METROPOLITAN AREA?

A Great Need _____ Some Need _____ No Need _____

ARE YOU FAMILIAR WITH THE RED ROCK CANYON AREA SIXTEEN MILES WEST OF LAS VEGAS?

_____ Never Heard of it
_____ Read about it in newspaper
_____ Heard about it from friends but have never been there
_____ Driven through on sightseeing drive
_____ Had picnics there
_____ Camped in the area
_____ Hiked in the area
_____ Gone horseback riding in the area

WHAT FACILITIES, IF DEVELOPED, WOULD YOU OR YOUR FAMILY USE IN THE RED ROCK AREA:

_____ Picnic sites (table, grill, water)
_____ Overnight campground sites
_____ Trailer campground sites
_____ Hiking trails
_____ Horseback riding trails
_____ Self-guided nature trails
_____ Museum and/or exhibit of geology, biology, and history of area

IF YOU BELONG TO AN ORGANIZATION THAT WOULD USE RECREATIONAL FACILITIES IN RED ROCK, WOULD YOU PLEASE ANSWER THE FOLLOWING:

Name of Organization ________________________________
Number of Members ______ Number of times per year organization might use facilities ________________

ADDITIONAL COMMENTS: (Please use reverse side)

f. Domestic livestock grazing should not be increased to utilize any water rights which may be acquired.

g. The subcommittee supports the timber stand improvement projects proposed by the Bureau of Land Management for Job Corps enrollees.

h. Mining should be excluded from high value recreation lands in the unit, and other high value recreation lands should be identified and protected.

i. Grazing rights in the unit should not be increased and the possibility of eliminating grazing in the future should be considered.

j. The subcommittee supports wildlife habitat improvement projects proposed by the Bureau of Land Management for Job Corps trainees-with the reservation that livestock privileges are not increased to utilize increased forage.

k. The Red Rock Canyon portion of the unit should be classed as a Recreation Area within the Recreation Complex.

l. The Bureau of Land Management application for protective withdrawal of some portions of the Red Rock Canyon Area should be approved.

m. The Red Rock Canyon Scenic Drive should be paved and include a spur and scenic overlook of the Las Vegas Valley.

n. Wheeler Wash Road from Pahrump to Cold Creek via Wheeler Pass should be improved at an early date to facilitate movement of Job Corps trainees.

o. The Nevada State Highway Department should improve the Wheeler Wash Road (Route 52) and the Red Rock Canyon Scenic Drive (Route 85) or, remove the route designations so that the Job Corps and Bureau of Land Management can do the necessary improvement work.

p. The Bureau of Land Management should negotiate to acquire 360 acres of key recreation lands within the planning unit which are now in private ownership.

q. Consideration should be given to the earliest possible establishment of a Job Corps camp in the vicinity of Cold Creek within the planning unit.

r. The proposed Red Rock Canyon Recreation Area should receive highest priority for early development because of its proximity to Las Vegas and the great need for immediate sanitation protection measures.

s. Clark County should assume the leadership in cleaning up and stopping dumping of litter along access routes to the unit, and zone these routes against tourist trap developments.

t. Clark County should take the necessary steps to insure the earliest possible paving of the West Charleston extension to Blue Diamond, named the Red Rock Front Scenic Drive by the subcommittee.

u. Land within the planning unit should not be considered for patent or lease under the Recreation or Public Purposes Act to private groups, public groups or local or national organizations.

v. The Bureau of Land Management should negotiate with the Frontier Girl Scouts and secure a withdrawal of their application for patent to 80 acres of key recreation lands in the Red Springs area. Granting of this patent would be inconsistent with the subcommittee recommendation to acquire 360 acres of key private lands in the unit - 160 acres of which adjoin the Red Springs site.

w. The parent committee should also ask the Girl Scouts to withdraw the Red Springs application.

x. The Bureau of Land Management should consider possible Recreation or Public Purposes applications within the unit for development of a public museum and outdoor concert shell. These developments could best be administered by Clark County.

y. The Bureau of Land Management should prepare to take over the improvement, operation and maintenance of the Willow and Cold Creek recreation sites which are now administered by the Bureau of Sport Fisheries and Wildlife.

z. The Provisional League of Women Voters report, "Recreation Survey of Las Vegas, Nevada" should be accepted and used as being indicative of local recreation demands.

aa. The subcommittee recommends that the Bureau of Land Management initiate an active directional, informational and protective sign program within the planning unit.

bb. The lands classified for disposal under the Small Tract Act in T. 22 S., R. 58 E., Section 11, should be declassified; and no additional "Small Tract" lands within the planning unit should be classified in the future.

cc. The U.S. Forest Service and Bureau of Land Management should coordinate trail building efforts to form a complete trail network in the unit.

dd. A master plan should be developed for the overall development and programming of the Red Rock Canyon - Spring Mountains Recreation Complex; and the plan, services, detailed drawings, revisions, reports and declarations of intent shall be maintained and revised by the agency held responsible for the development of the area.

At a committee meeting conducted by BLM Nevada State Director Russell Penny, all of the above recommendations were approved.

5. April 1, 1967 - State of Nevada passed a resolution authorizing the purchase of lands in the Red Rocks. One hundred thirty-two thousand dollars ($132,000) was designated for this purpose.

6. August 1967 - Planning team designated and announced at a Red Rock Canyon Recreation Lands Master Plan meeting held August 24, 1967. Those in attendance at this meeting were:

Martin Buzan, BLM Nevada State Office
Eric Cronkhite, Nevada State Parks Administrator
Ralph Dunn, BLM Nevada State Office
Mrs. Samuel Ford, State Parks Advisory Committee
Tom Handley, BLM Las Vegas
Bill Holmes, BLM Washington Office
Frank Pallo, BLM Portland Service Center
L. J. Porter, BLM Las Vegas
Del Price, BLM Denver
John Richardson, Nevada State Park Planner, Carson City
Art Tower, BLM Las Vegas

The planning team, consultants and advisory committees were as follows:

Planning Team

Delmar Price (Team Leader)	DSC	Recreation Planning
Lloyd Pierson	DSC	Archaeology & Interpretation
Robert Saunders	DSC	Demand Analysis
Norman Waagen	DSC	Landscape Architect
Frank Pallo	PSC	Resource Management
Keith Chatterton	PSC	Landscape Architect
O. B. Howell	NSO	Landscape Architect
Arthur Tower, Area Mgr.	Las Vegas	Resource Management
John Richardson	Nevada State Park	Landscape Architect

Consultants

Terry W. Savage	National Park Svc	Park Planner
Richard Barbar	Bur.Outdoor Rec.	Demand Analysis
Howard Booth	Sierra Club	Resource Conserv.
Alfred Taggart, Jr.	Clark Co.Plan.Dept.	Regional Planning
Dr. James Deacon	Univ. Nev. Las Vegas	Ecology
Dr. Chester Longwell	Stanford U.	Geology
K. K. Miller	Interested Citizen	Weather & Resources
Dr. Richard H. Brooks	Desert Res. Inst.	Archaeology
John Donaldson	Nev. F & G Comm.	Wildlife
Ted Snyder	U.S.G.S.	Hydrology
Ralph Smith	U.S.G.S.	Hydrology
Elbert B. Edwards	So. Nev. Historical Society	History
Ralph Conrad	BLM, WO	Resource Management

Advisory Committees

Red Rocks Resource Committee
State Park Advisory Commission
BLM District Advisory Board

7. June 27, 1967 - Spring Mountain Planning Unit, of which the Red Rock Recreation Lands are a part, was classified for multiple use management.

8. October 29, 1967 - Red Rock Canyon Recreation Lands were dedicated.

9. December 31, 1967 - Letter from K. K. Miller concerning the draft of the Red Rock Master Plan. Miller suggested that the plan emphasize research of past Indian use and study the agriculture potentials of Red Springs.

10. January 3, 1968 - Nevada State Parks Advisory Commission Meeting. Those in attendance were: Thomas W. Miller, Robert Forson, Thalia Dondero, Jean Ford, Eric Cronkhite, John Richardson, and Charles Crunden. (Del Price had presented Red Rock Master Plan to the group December 18, 1967.) The following were comments and recommendations made on the master plan:

a. Ash Creek - Recommended campground be eliminated at this site and Calico Basin development sites be used for organizational or individual day use activities. Jean Ford suggested Calico Basin be excluded from Federal or State management consideration and be developed and managed by Clark County. Ash Creek be included in final phase of development.

b. Roads

(1) Administrative control of the road system be reworked so as to require only two contact stations.

(2) Brownstone Canyon Road should be dead-ended at park boundary to allow only interior use.

(3) Eliminate from the plan the details regarding the number of parking spaces on Crestline Highway.

(4) Use existing roadbeds where feasible.

c. Hunting - Should be allowed during established seasons. Firearm use and hunting should be excluded from developed areas and near roads. Use of guns allowed only during hunting seasons. Rifles should not be permitted; deer hunting should be limited to bow and arrows.

d. Facilities

(1) Bicycle Trail - Provide trails adjacent to the major roads. Development should be in final phase.

(2) Rams-Head - Corrals and campgrounds should be developed.

(3) Interpretive Center - Should be in Phase I of development.

(4) Campground Site - Provide trailer campground site in lieu of Ash Creek.

11. January 9, 1968 - Meeting with Red Rocks Resource Committee to discuss the Red Rock Recreation Lands Master Plan. The following recommendations were made:

a. Calico Basin be developed by a political subdivision other than federal or state.

b. There be one entrance to the Red Rocks.

c. The road to Sandstone Quarry Area should terminate there and not be a loop road.

d. Roads follow existing alignments as nearly as possible. New roads, uncut, be strongly considered before they are developed. Existing scars be handled in the best possible way.

e. No hunting be allowed in the Red Rocks.

f. Cattle grazing be kept south of the developed areas.

12. February 14, 1968 - Sportsman voiced opposition to closing Red Rocks to hunting.

13. April 10, 1968 - Meeting held with the Nevada State Park Advisory Commission. The master plan revision was discussed. The opinion of the group was divided. Some supported BLM's proposals as outlined in the plan; some felt the Park System should be more involved.

14. April 11, 1968 - Meeting of the Red Rock Resource Committee held at Jean Ford's residence There was some opposition to full development as outlined in the master plan. Some felt the Park System should be more involved. The final consensus of the group was to proceed with the master plan.

15. June 4, 1968 - Meeting held in Carson City with Nevada State Park Advisory Commission. State Park involvement, funding and the future of Pine Creek were discussed.

16. August 29, 1968 - Public meeting in Las Vegas at which the master plan was presented to the public by BLM personnel. Most people felt that some development was needed but only if the natural environment and aesthetics were not damaged.

17. June 30, 1969 - Cooperative and basic agreement between the Nevada State Park System and the Bureau of Land Management for the joint administration of the Red Rocks was approved.

18. May 15, 1971 - Resolution #6 was passed by the Nevada Wildlife Federation, Inc., at their annual meeting at Tonopah, Nevada:

"BE IT RESOLVED, that the Nevada Wildlife Federation, at its 20th Annual Meeting in Tonopah, May 15 - 16, 1971, hereby reiterates its support of the Bureau of Land Management's Master Plan for the recreational development of the Red Rock Recreation Lands, urges adequate funding and prompt implementation on a schedule that will keep abreast of the needs. In the event that special interest pressure groups succeed in sabotaging the recreational development plans, the Nevada Wildlife Federation further resolves that the area either be turned over to the Nevada State Parks Department or that the land be restored to the Desert National Wildlife Range."

19. April 1971 - Recommendations of the Desert Enjoyment Fraternity:

a. A sizable work force, hired to maintain and supervise the area now;

b. The Interpretive Center should be completed as soon as possible;

c. Except for the existing gravel road into Pine Creek and the newly-graded road south of Oak Creek, all access roads should be returned to nature;

d. The proposed lodge should be turned into a nature study center for the Clark County School System;

e. The Red Rock scenic drive should be designed to follow existing jeep roads as much as possible, with the section from Rocky Gap back to the Blue Diamond Loop Road designed to use the existing Red Rock Canyon Road;

f. No overnight camping should be allowed in the area except for primitive sites on the trails;

g. Aside from Red Rock Scenic Drive, no paved roads should be allowed in the general area. Control of existing gravel roads is to be maintained;

h. No water wells should be drilled in the area except for necessary modification(s) to those wells already present.

20. May 31, 1972 - A report entitled "A Review of an Interpretative Plan for Red Rock Canyon Recreation Lands" was prepared and submitted by Russell K. Grater, an interpretative specialist consultant under contract to the BLM. This report reviewed and commented on the interpretive plan developed for the Red Rocks. The report generally approved the plan with minor changes.

21. June 1, 1972 - Letter from the Nevada Open Spaces Council after the construction of Segment A of the Red Rock Scenic Drive precipitated a public meeting.

22. June 22, 1972 - Public meeting in response to the Nevada Open Spaces Council letter was held. An environmental impact statement was mandated for the Red Rocks Master Plan.

23. 1973

a. Assembly Joint Resolution 9 was passed by the Nevada State Legislature. This resolution recommended the acquisition of the Red Rocks as a state park.

b. Two bills, Senate 1638 and Senate 2013 were introduced in the U.S. Senate by Senator Alan Bible. Both of these bills would allow the acquisition of the Red Rocks by the Nevada State Park System.

c. House Bill 9910 was introduced in the U.S. House of Representatives by Congressman David Towell. This bill would allow the acquisition of the Red Rocks by the Nevada State Park System.

d. A supplemental cooperative agreement between the Nevada State Park System and the Bureau of Land Management was approved.

B. Consultation and Coordination during Review of the Draft Environmental Statement

1. Public Hearings - The draft environmental impact statement was made available for public review and comment on January 31, 1974.

On April 16, 1974 a public hearing on the draft environmental impact statement was held by the Las Vegas District of the Bureau of Land Management. Prior to this hearing a series of four workshops were held at the Las Vegas District Office. At these workshops which were held on March 13, 26, 28 and April 4, 1974, the draft impact statement was informally discussed by the district staff and the public. Comments received at these workshops while not official were noted and included in the final statement.

The record was kept open for the receipt of written comments until April 25, 1974.

2. Summary of Public Response

Total of 638 comments (including petitions) were received from the public and non-governmental organizations in response to the draft environmental impact statement. In addition, 18 governmental agencies (Federal, State and Local) also submitted comments. These comments were in response to a BLM request that not only should comments concerning the draft impact statement or its contents be made but that a preferred level of development for the Red Rocks area also be indicated. It must be pointed out that comments on the preferred level of development do not reflect adequacy or inadequacy of this environmental impact statement. Many of the comments received from non-governmental organizations and groups as well as the general public were of this type.

Those comments that dealt with the adequacy of the statement, requests for new or additional data, corrections of erroneous data, etc. were analyzed and included in the text of the statement.

The number of the text page that includes the suggested change has been placed in the margin of the letter or transcript through which the request was made. The comments and the reference page number are included in the supplement of this statement.

Those comments that dealt with the preferred level of development were by and large in favor of less development than is contemplated for the proposed action. Comments of this type have also been included in the supplement although not strictly applicable to the review of the impact statement.

In addition, a number of comments suggested that an alternative of limited development below the escarpment and no development above the escarpment be included in the final statement, and that "day use only" be considered as a management option rather than as a developmental alternative. In response to these comments, the "day use only" alternative was dropped and a corridor development alternative (Alternative IV) was substituted.

3. Response to General Comments.

In addition to the comments described above, a number of more generalized comments were also received. Since these comments effect more than one portion of the statement they have been addressed in narrative form. Comments of this type are identified in the supplement by two vertical lines.

Issue 1:

Recommend that Master Plan be discussed in more detail and that a copy of the plan be included in the final E.I.S.

Issue Raised By:

Daisy Talvitie
Jean Ford
Thalia Dondero
Nevada Wildlife Federation
Saguaro Ecology Club
Toiyable Chapter of the Sierra Club
Nevada Open Spaces Council
League of Women Voters
Dennis Hess
M. S. Mickelson
Erin Miller
Amy Mazza-Scholl
Francis W. Thorne

Response:

The discussion of the Master Plan has been made more detailed and a copy of the plan has been included as Appendix I.

Issue 2:

Recommend that changes be made in the Master Plan to include options not considered when the plan was written (i.e. bicycle paths, one-way traffic on Scenic Drive, etc.)

Issue Raised By:

Jean Ford
Thalia Dondero
Rolf Peterson
Las Vegas Group of the Toiyabe Chapter of the Sierra Club
Nevada State Park System
David Alger
Bill Fierro
Marlow Hoesly
Roger Scholl
Nevada Open Spaces Council

Response:

None of these were included as part of the proposed action but many were included as possible mitigating measures to the proposed action (p. IV-1).

Issue 3:

Recommend that a more detailed discussion of further road construction especially Segment "B" and the Crestline Scenic Drive be included along with discussion of existing roads including Segment "A".

Issue Raised By:

Mary Kozlowski
Nevada State Park System
Jean Ford
Toiyabe Chapter of the Sierra Club
Nevada Open Spaces Council
Dennis Hess
Thalia Dondero
George Potter
Bill Fierro
Terri Long
Robert Forson
Rolf Peterson
Billie Jean James
Marlen Hoesly

Response:

More detailed treatment of this aspect of the Master Plan has been included in the Description of the Proposed Action (p. I-6), Impacts (p. III-1), and Mitigating Measures (p. IV-14).

Issue 4:

Coordinate with the Nevada State Park System on the development of the final E.I.S.

Issued Raised By:

Nevada State Park System
Mary Kozlowski
Nevada Open Spaces Council

Response:

Representatives of the Nevada State Park System were invited to review and comment on the final E.I.S. as it was being written. Comments made by these representatives were included in the statement as well as new data supplied by them.

Issue 5:

Charts used to compare developments in the various alternatives were incorrect and confusing.

Issue Raised By:

Toiyabe Chapter of the Sierra Club
Nevada Open Spaces Council
U.S.D.I. Fish and Wildlife Service

Response:

Because of the confusion caused by these charts, they were deleted from the final E.I.S., except for a summary of developments and major impacts (p. iv).

Issue 6:

Many of the maps contained errors.

Issue Raised By:

Nevada Public Lands Task Force
Nevada State Parks System
Nevada Open Spaces Council
U.S.D.I. Fish and Wildlife Service

Response:

All maps were checked and corrections made as needed.

Issue 7:

Recommended that a more detailed discussion of present and future management be included.

Issue Raised By:

Nevada State Parks System
Jean Ford
Terri Long
Bob Forson
Rolf Peterson
Billie Jean James
Marlen Hoesly
Mary Kozlowski
Sierra Club

Response:

More detailed treatment of management needs, methods, etc. has been included in the Description of the Proposed Action (p. I-12), Description of the Existing Environment (p. II-57), Impacts (p. III-21), and Mitigating Measures (p. IV-12).

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APPENDIX I

A Recreation Management Plan for Red Rock Canyon Recreation Lands (Master Plan)

A RECREATION MANAGEMENT PLAN FOR

RED ROCK CANYON

RECREATION LANDS

PREFACE

The preparation of a master plan for recreation administration, resource management, and development of the Red Rock Recreation Lands represents the culmination of countless hours of planning efforts by the Bureau of Land Management in cooperation with the Nevada State Parks Division while guided by the suggestions of many interested user groups and individuals.

The plan at this stage is a point of departure for an on-going program with updating based upon continual assessment of user trends, public response, and resource capacities for developments.

Throughout plan preparation, the basic planning elements were subject to both facts and planning assumptions. Certain assumptions related to water resources, visitation, optimum resource capacity, landscape consideration, adequate funding, cooperative opportunities are vital controls to the full implementation of the master plan. It is with these assumptions in mind that we cautiously move forward in the action phases of the plan.

Water - The availability of adequate water resources is a controlling and vital limitation. Knowledge of this resource is prerequisite to practically all phases of the master plan. In fact, water information in Nevada is so important it should precede master planning in all instances. Should a water feasibility study prove negative or economically infeasible, a shift in development emphasis would be necessary.

Visitor Use - Also assumed in the planning effort was the projection of future visitor use in the area. The proposed developments are based upon both anticipated visitor use figures as well as the estimated development capacity of the resource. Both of these variable assumptions must be continually reassessed through actual visitor use counts and preference surveys prior to any development. When such developments are deemed necessary, thorough landscaping considerations will be made, keeping in mind the basic theme of the planning concept — the area is set aside for its unique natural features and any developments must be commensurate with preservation and enhancement of those features.

← Aerial view of the Red Rock escarpment

Financing - Basic to the total planning and development concept is the necessity for adequate funding by Congress. Financing for plan implementation and updating hinges directly upon appropriations to the Bureau of Land Management.

During a period when governmental expenditures are committed to the accomplishment of significant national and international goals, we can expect some deemphasis of local programs. Thus, schedules for development, such as that proposed for Red Rocks, may require adjustment and deferment.

Cooperative Opportunities - Cooperation has been the cornerstone of the Red Rock Canyon Recreation Lands development since its inception several years ago. Unquestionably this cooperation will be continued and strengthened as the phases of the master plan for development are brought into existence. The State of Nevada, through its several administrative organizations and political subdivisions, has contributed much to the Red Rock Canyon Recreation Lands development and it is expected that its role will be expanded in the future.

Plan Maintenance - It is further assumed that a procedure will be developed for plan updating. The plan will be continually analyzed and reviewed, and this data will be used in the modification procedure. This updating process would resolve differences between the current plan and future assessment of planning elements based upon trends, modifications, and public response.

In summary then we are presenting a blueprint for administration, management, and development of the Red Rock Canyon Recreation Lands. The plan should be viewed as a tool for action with enough flexibility to be cognizant of new directions of thought based upon a continual review by planners guided by public preference, resource capacities, and adequate financing.

/s/ Dennis E. Hess
Recommended, District Manager

/s/ Nolan F. Keil
Approved, State Director

CONTENTS

Section A Resource Management

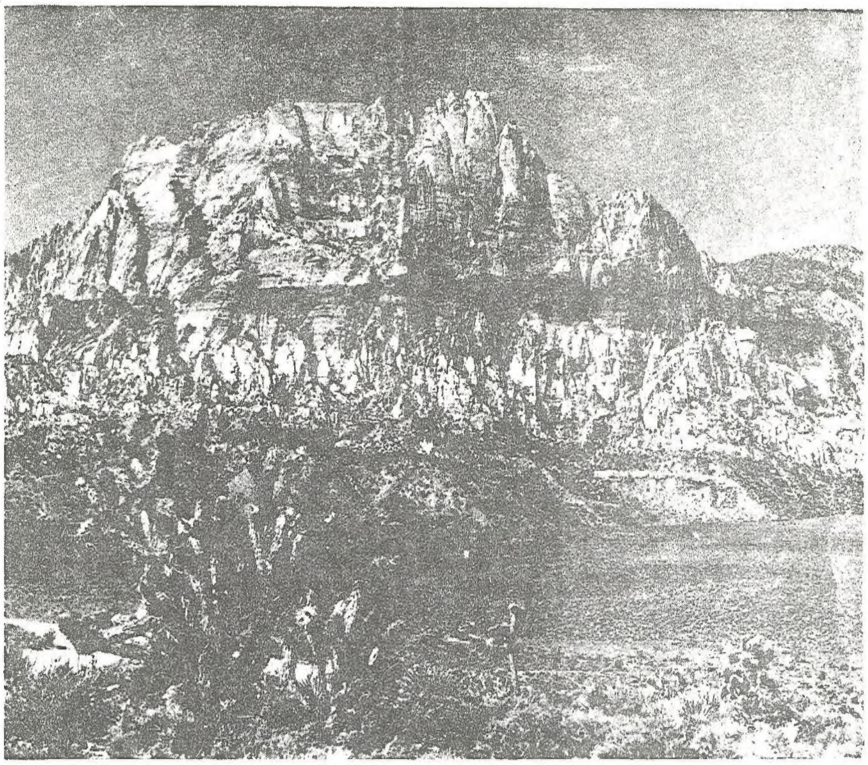
Section B Visitor Management

Section C Administrative Management

Section D General Development Plan

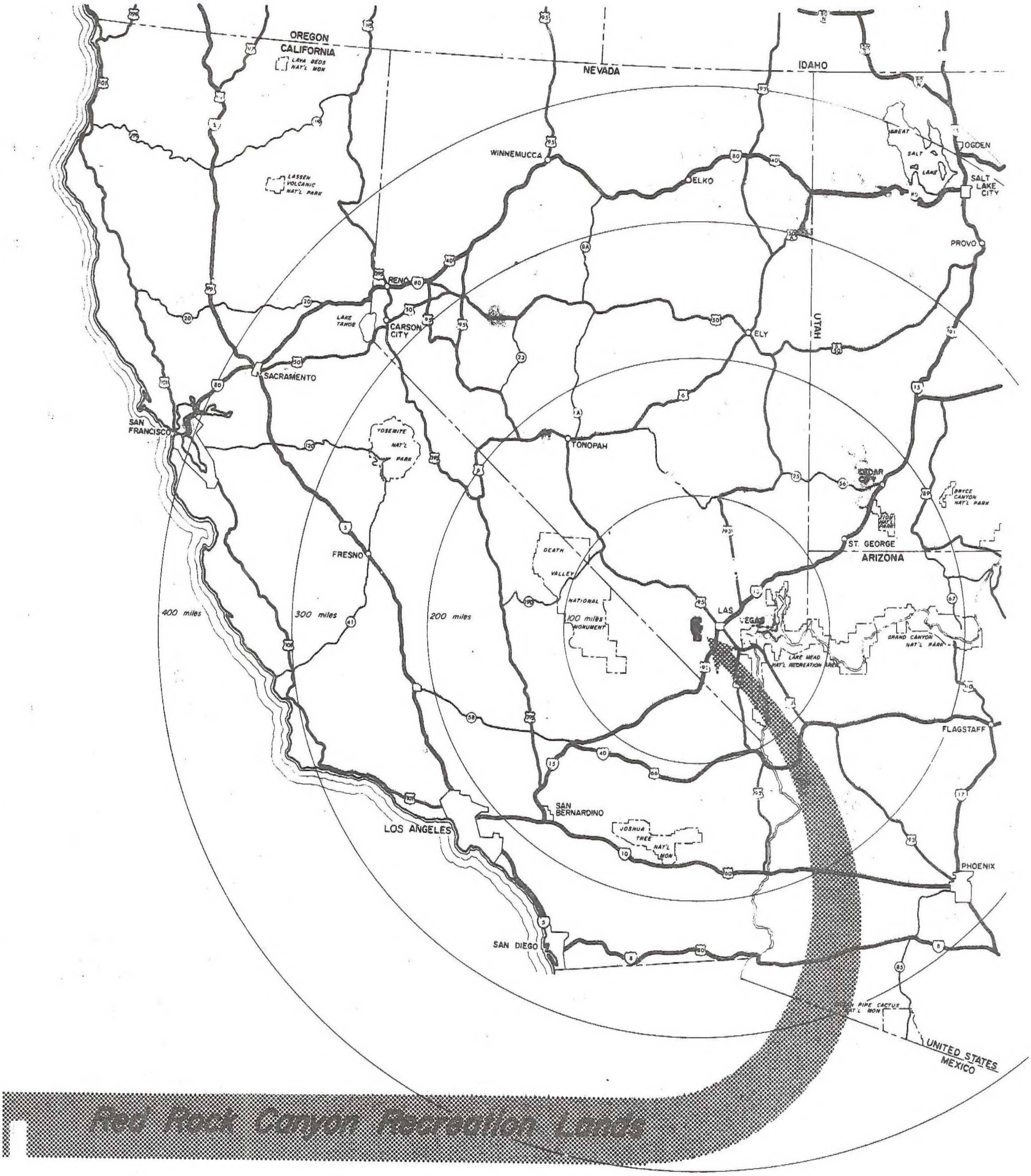
Section E Development Area Plan

Section F Basic Information

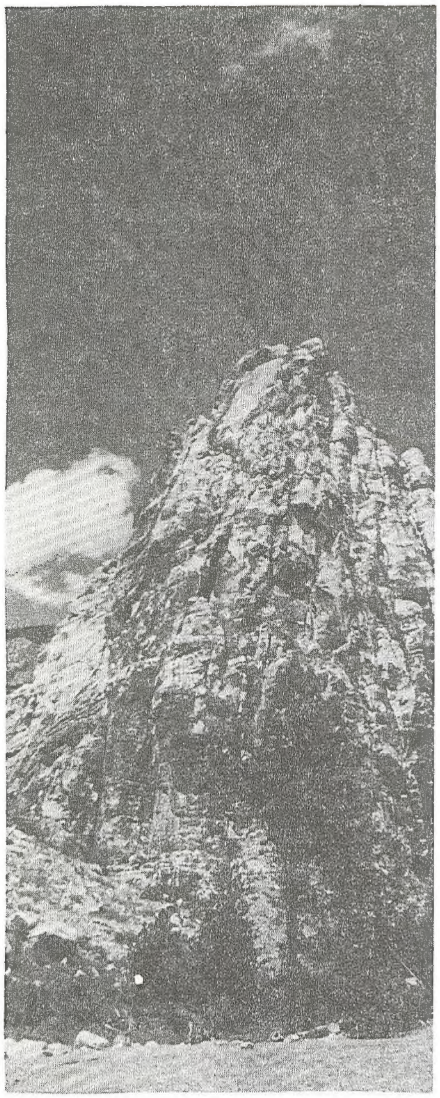


Desert vegetation enhances a view of the Red Rocks

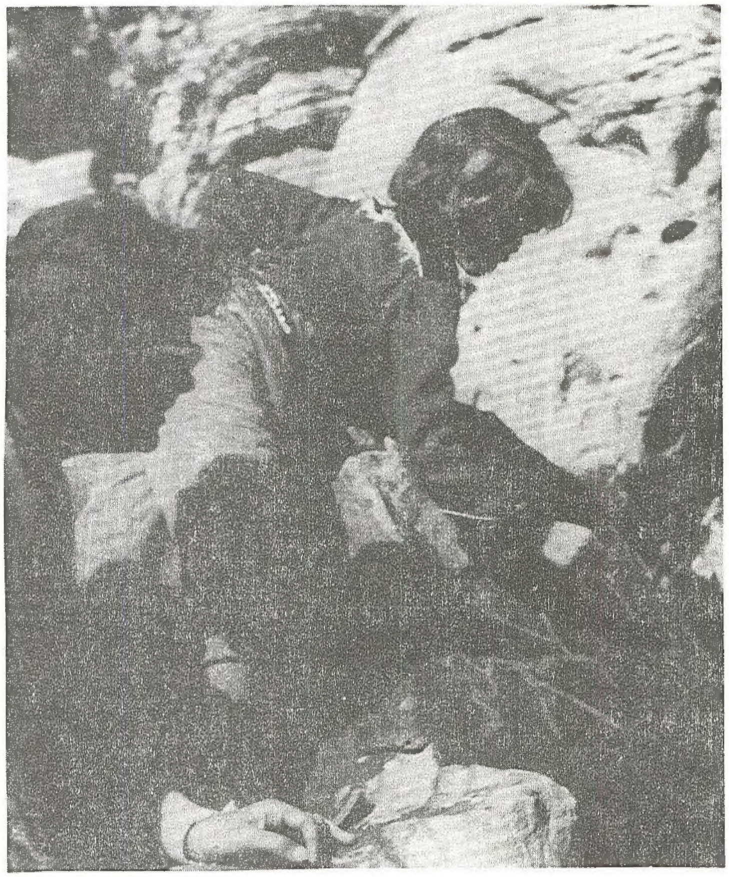
Las Vegas in the foreground - Red Rocks in the background



Red Rock Canyon Recreation Lands



Unique vegetation backed by majestic cliffs are the big attractions in Pine Creek Canyon.



Archeological remains such as these found in the Brownstone area are important recreation resources which must be protected.

INTRODUCTION

The splendor and enchantment of the Red Rock Canyon Recreation Lands have become increasingly popular in recent years. The abundance of natural values includes unique examples of ecological and geological processes. In addition, early habitants of the area have left a wealth of archeological sites. These attractions have seemed to create a magnet for recreational use by people from Clark County, all Nevada and visitors from other states.

This influx of visitors has accounted for a veritable Pandora's Box of recreational activity. Picnicking, camping, hiking, horseback riding, rock climbing, nature study, rock hounding and photography are some of the more active pursuits. Exclusive of these, the area generates considerable aesthetic appeal.

Proper utilization of the area by the public is paramount; for without this, the very attractions the visitor comes to enjoy will be lost. It is for this reason, that a master plan for management and development has been prepared. With a continued planning process throughout the coming years, these guidelines can be effective.

The purpose of this master plan is to provide a logical blueprint of effective recreation developments meeting the needs of the visitor and consistent with the capacity of the resource.

The specific objectives of this master plan are:

(1) To designate quality recreation facilities commensurate with the identified needs of the general public.

(2) To protect, enhance and maintain the natural beauty of the area to ensure the visitor with a meaningful and quality recreation experience.

(3) To ensure the integrity of the resource by providing no more than the optimum number of recreation facilities compatible with the capacity of the resource.

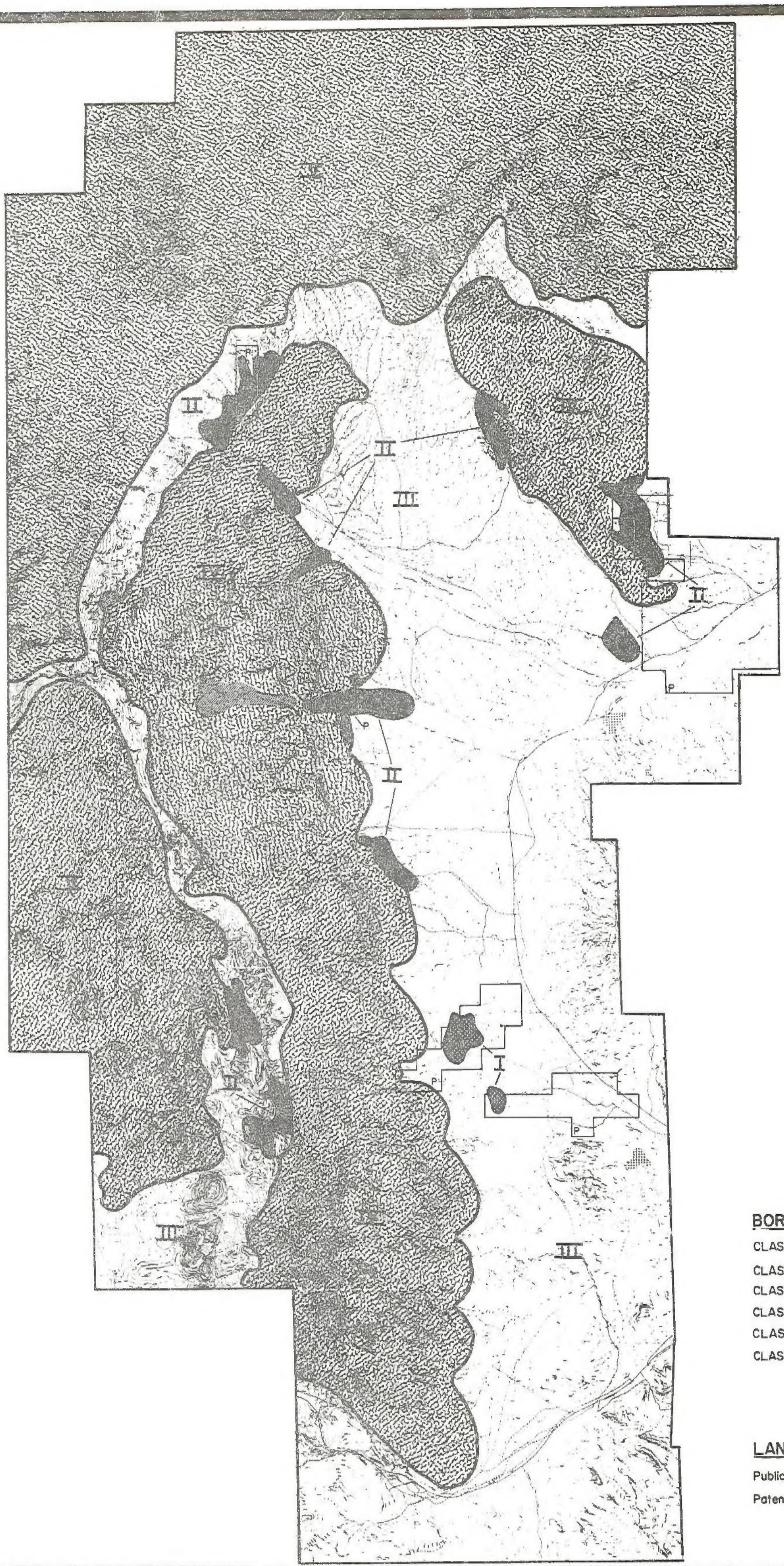
(4) To designate areas of restricted use where the archeological, ecological, and geological values can dictate, for education and research in conjunction with the basic objectives of general recreation.

(5) To develop a program of interpretation and information to acquaint the public of the needs for preservation and conservation of the area and to assist the visitor in more fully enjoying and understanding the natural and historical aspects of the area.

(6) To ensure that the common goals for the implementation of the plan are carried out through coordination and cooperation with other Federal, state, and local governments and various interested user groups.

Section A

RESOURCE MANAGEMENT



BOR CLASSES

CLASS I	121 Acres
CLASS II	1,182 Acres
CLASS III	32,456 Acres
CLASS IV	18,681 Acres
CLASS V	25,568 Acres
CLASS VI	sites too small to define in acres (see cultural overlay)

LAND STATUS

Public Domain	☐
Patented	P

LEGEND

Wild Areas	▨
Open Space - Corridor Areas	☐
Natural Areas	▨
Recreation Development Areas	■
Commercial Public Service Areas	■
Administrative Areas	▨

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
IN COOPERATION WITH
NEVADA STATE PARK

RESOURCE MANAGEMENT UNITS

Part of Recreation Management Plan

RED ROCKS CANYON RECREATION LANDS

UPDATED	
NAME	DATE

RECOMMENDED Dennis E Hess
DISTRICT MANAGER
APPROVED Nolan F Keil
STATE DIRECTOR
APPROVED Eric R Cronkhite
NEVADA STATE PARK ADMINISTRATOR

SCALE 1 1/2 0 1 2 3MI.

DATE

SHEET 1 OF 6

DRAWING NO.

Section A

RESOURCE MANAGEMENT

CONTENTS

1. RESOURCE PROTECTION AND DEVELOPMENT
    a. GEOLOGICAL FEATURES
    b. VEGETATIVE COVER
    c. WILDLIFE
    d. CULTURAL FEATURES
    e. WATER
2. MANAGEMENT UNITS
    a. WILD AREAS
    b. OPEN SPACE - CORRIDOR AREAS
    c. NATURAL AREAS
    d. RECREATION DEVELOPMENT AREAS
    e. COMMERCIAL PUBLIC SERVICE AREAS
    f. ADMINISTRATIVE AREAS
3. LAND ACQUISITION
    a. Priority #1
    b. Priority #2
    c. Priority #3
4. CLASSIFICATION NEEDS

RESOURCE MANAGEMENT

1. Resource Protection and Development

a. Geological Features. The beauty and grandeur of the multicolored sandstone formations are the primary recreation attraction in this area. All developments and programs will be designed to accent and enhance the natural beauty of the colorful sandstone formations. Uses, developments, and/or development practices which deface or otherwise detract from the natural beauty of these formations will not be allowed. Trail development and directional and interpretive signs will be allowed but will be designed and installed so as to harmonize with the natural environment.

b. Vegetative Cover. The vegetative cover enriches and adds accent to the total environment of the area. The vegetative species shall be managed so as to encourage optimum growth and reproduction of the natural species with a minimum of interference of the natural processes. Domestic livestock grazing and wildlife use shall continue, based on sound management programs as set forth in the range allotment plans and the wildlife management plan. These management plans will conform with the constraints established in this and other sections of the recreation management plan. Artificial revegetation practices such as chaining, railing, plowing, spraying, etc. are not to be allowed. Browse and forage production will be controlled by placing emphasis on management practices such as rest rotation systems, altering seasons of use, controlling populations, etc.

A program will be developed for revegetating scarred areas such as abandoned roads, etc. with native vegetation, using plant materials which are in character for each area.

Tree planting is encouraged, using native species, in recreation development areas providing water is available for irrigation (see water allocation priorities in part "e" below).

c. Wildlife. Wildlife is an important part of the recreation scene. Emphasis shall be given to increasing the wildlife populations. Where conflicts exist between wildlife and domestic livestock use, priority will be given to wildlife.

Visitor use studies for this area indicate that "wildlife observation" will be much more in demand than hunting. The wildlife management plan will, therefore, give major emphasis to the "observation" angle of wildlife use. Where conflicts exist between hunting and wildlife observation, priority will be given to managing wildlife for observation purposes.

The wildlife management plan will give equal emphasis to both game and non-game species. Species of particular importance are:

Desert Bighorn Sheep
Deer
Quail
Rabbits
Resident and migrant bird populations

(For details on hunting and use of firearms see Items "g" and "h" on page 7-B in the Visitor Management section.)

d. Wild Burro. Although the wild burro is not considered a wildlife species, it is a wild creature and will require a special management program similar to that provided for wildlife species. The wild burro is considered an important recreation attraction and should be retained as such. The size of the burro herd and other management considerations will be determined jointly when forage, water, and other requirements are considered for livestock and wildlife.

e. Cultural Features. A protection program will be initiated to help preserve and conserve the antiquities values in place in the Red Rocks. Development should avoid antiquities values, but in cases where this is impossible and development is vital, salvage excavation will be carried out. Salvage excavation will be necessary at the following sites prior to development.

Red Springs
Sandstone Quarry
Lost Creek
Ice Box

Detailed survey work will be completed at all other development sites prior to development. It is very likely that salvage excavation will have to be completed at several additional sites based on the outcome of the survey work.

Restoration of prehistoric rock art may be necessary in some instances, but until more is known about techniques no restoration should be attempted except as an extreme emergency measure. Protection of rock art will be accomplished through the interpretive program and, in some cases, with 4-foot high chain link fences strategically placed to keep visitors a safe distance back from the art work so they can not easily mark it up.

e. Water. Surface water in this area is scarce and much in demand to sustain the plant and animal communities, as well as to meet human needs. Priority will be given to preserving the surface water in an "as is" condition. Well water will be the preferred source of water for human use.

Water will be allocated on the following priority basis:

Priority #1 - Human consumption
Priority #2 - Wildlife and livestock consumption
Priority #3 - Maintaining streamside vegetation
Priority #4 - Irrigation purposes (tree planting in development areas)
Priority #5 - Flush toilet and shower facilities, etc. (Exceptions to this are the Interpretive Center, Administrative areas, and the two commercial areas, where flush facilities are mandatory)

2. Management Units. (See the Management Unit Drawing for location of individual units.)

a. Wild Areas. These areas shall be dedicated to preserving the wilderness experience. Improvements in this area shall be restricted to trail development, primitive camp and picnic sites, rustic interpretive and directional signs, primitive facilities for visitor protection and safety, and other facilities which are essential for visitor and resource protection in a wilderness environment, such as fire suppression facilities. No motorized vehicles will be allowed in this zone.

Other uses such as livestock grazing, watershed protection, and wildlife development are permitted but must abide by the constraints established in this and other sections of the plan.

b. Open Space - Corridor Areas. The primary function of this area is to provide the spacial area from which the scenic attractions can be viewed. Vehicular traffic will be permitted in this area but will be restricted to designated roads and trails. Roads will be located so as to offer the best views and yet be unobtrusive. Improvements in this zone, with the exception of roads and trails, will generally be on the perimeter and concealed so as not to mar the view. The color, texture, and height of all structures within this area will be designed and constructed so as to harmonize and blend in with the immediate environment.

Other uses such as livestock grazing, watershed protection, and wildlife development are permitted but must abide by the constraints established in this and other sections of the plan.

c. Natural Areas. These are areas where special management programs must be developed to preserve, protect, and study natural resources and/or processes. Two such areas have been established in the Red Rocks as follows:

Pine Creek Natural Area. The entire North Fork of Pine Creek is set apart exclusively for scientific study and protection of the ecological community. All recreation use shall be excluded from this area. The Bureau shall control the use in this area by issuing special land use permits or some other suitable control system.

Lone Pine Natural Area. The Lone Pine area has an intermingling of the four major plant communities in the Red Rocks area. This area will be preserved for public viewing and study. Detailed programs will be developed to protect, preserve, and interpret this unique ecological community.

d. Recreation Development Areas. Sites where intensive recreation activities are planned fall in this area. Improvements which are allowed in these areas include campgrounds, picnic sites, overlooks, interpretive facilities, active play and recreation areas, and other compatible recreation facilities.

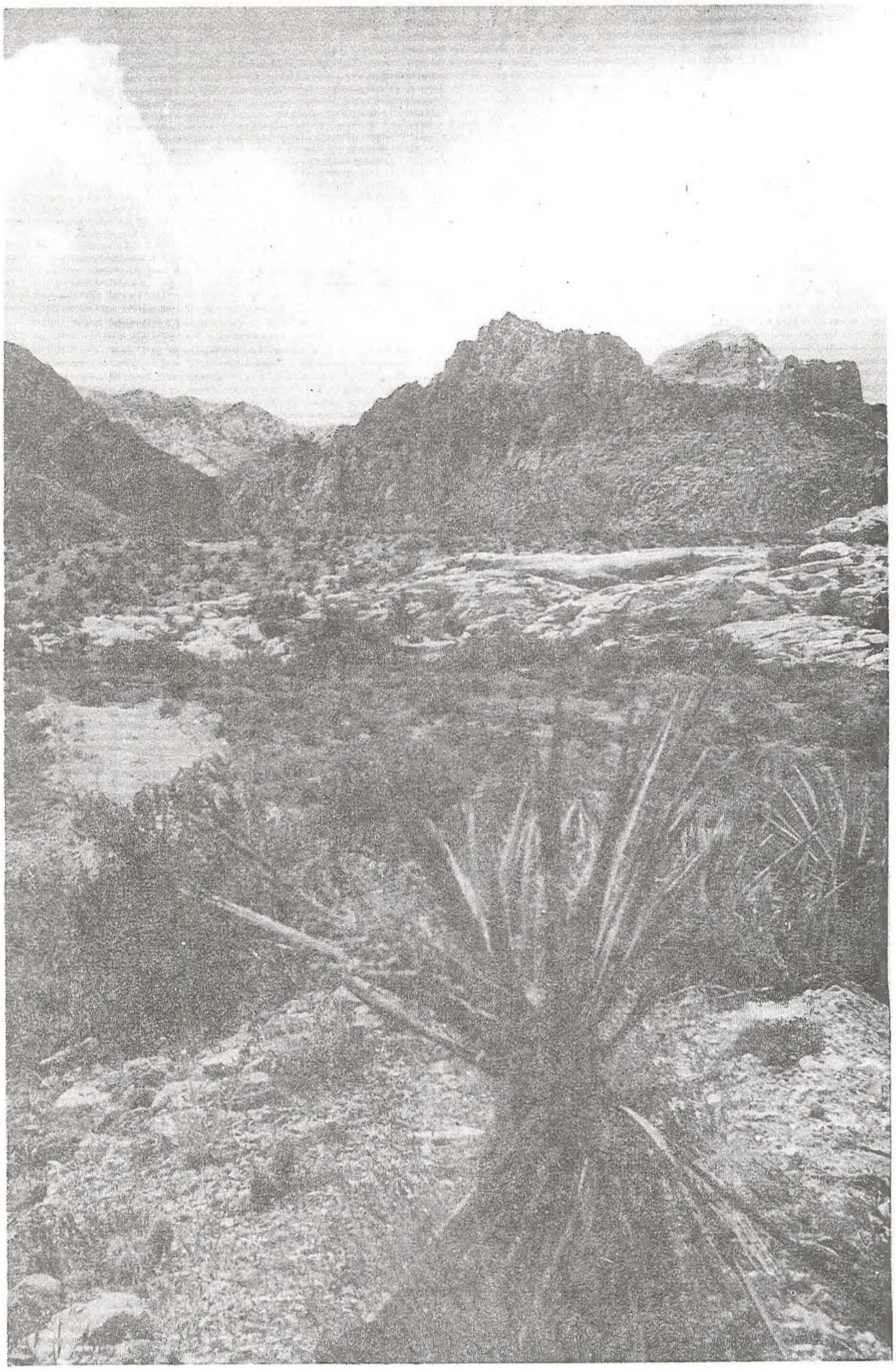
e. Commercial Public Service Areas. A commercial public service area is a tract of land where public services and accommodations will be provided. Uses permitted in these areas are outlined in Items 13 and 17 of the Development Area Narrative, pages 7-E and 9-E.

f. Administrative Areas. An administrative area is a tract of land where facilities will be located which are necessary for the administration and management of the area. Uses permitted in these areas are outlined in Item 3 of the Administrative Management section, pages 2-C and 3-C.

3. Land Acquisition. (See the land status on the Management Unit Drawing.) The goal is to acquire--through exchange if possible--all private inholdings within this area except the small tract lands in the SE$\frac{1}{4}$ SW$\frac{1}{4}$ sec. 6, T. 21 S., R. 59 E, and the Girl Scout lands in the SE$\frac{1}{4}$ NE$\frac{1}{4}$, NE$\frac{1}{4}$ SE$\frac{1}{4}$, sec. 1, T. 21 S., R. 58 E. The Pine Creek, La Madre Canyon, and Ash Creek properties all have exceptional potential for intensive recreation development; and in each case, the private lands also block access to areas of high recreation value on public lands. The "old Wilson Ranch" and the Bonnie Springs Ranch both have potential for development as lodge and dude ranch facilities respectively, but the primary justification for acquisition is to protect the integrity of the natural features. These properties adjoin the Blue Diamond Scenic Loop road; and if indiscriminate use or improvements were allowed, the spectacular view of the Red Rock escarpment would be seriously impaired. The same rationale applies for the Oliver Ranch and the Howard Hughes property at the main entrance to the Red Rocks area.

Acquisition of the private inholdings would also clear up all the surface water problems in the area, since the water rights would be conveyed with the property.

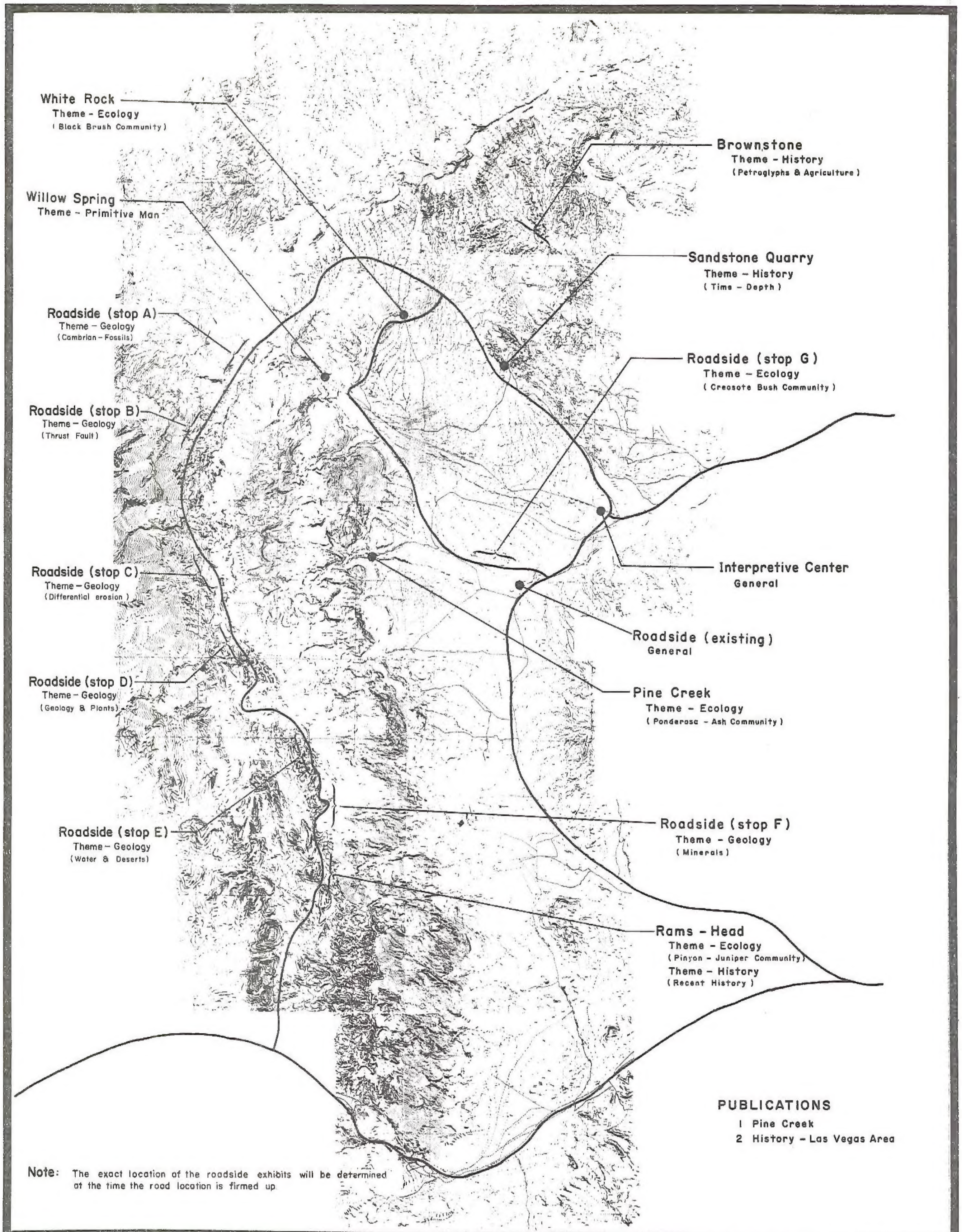
4. Classification Needs. This entire area has been classified for retention under Classification and Multiple Use Act. No change is recommended in the present classification.



A view from the Sand Stone Quarry Picnic Site

Section B

VISITOR MANAGEMENT



PUBLICATIONS

1 Pine Creek

2 History - Las Vegas Area

Note: The exact location of the roadside exhibits will be determined at the time the road location is firmed up.

LEGEND

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
IN COOPERATION WITH
NEVADA STATE PARK

INTERPRETIVE DEVELOPMENT DRAWING

Part of Recreation Management Plan

RED ROCKS CANYON RECREATION LANDS

UPDATED

NAME	DATE

RECOMMENDED
DISTRICT MANAGER
APPROVED Nolan F. Keil
STATE DIRECTOR
APPROVED Eric R Cronkhite
NEVADA STATE PARK ADMINISTRATOR

SCALE 1 1/2 0 1 2 3ML

DATE SHEET 2 OF 6

DRAWING NO.

Section B

VISITOR MANAGEMENT

CONTENTS

1. INFORMATION PROGRAM
2. INTERPRETIVE PROGRAM
3. VISITOR PROTECTION
4. COMMERCIAL ACCOMMODATIONS
5. RECREATION ACTIVITIES

VISITOR MANAGEMENT

1. Information Program

a. Interpretive Center. The Interpretive Center will be the keystone in the information program because of its location on the major entrance road into the area. The building will contain a manned information desk where verbal and published information will be dispensed. Such information aids as cartridge-operated projectors, wall maps, state, regional, and local recreation publications and others will be readily available to the public.

b. Entrance Roads. Information-dispensing devices will be established on each of the two other entrance roads, soon after the roads enter the recreation area boundaries. These will be structures large enough to be noticeable, possibly even large enough to be manned if fee collecting dictates. Detailed information on the recreation area and its facilities will be made available to the public via such things as permanent displays and publication dispensers. A special plea will be made here for the visitor to use the Interpretive Center also.

c. Publications. The dedication information leaflet will be expanded to cover all facility locations and uses as these are developed. A special attempt will be made, via the leaflet, to indicate the type of outdoor manners most visitors consider acceptable in a recreation area of this type.

For the wilderness explorer and hiker, a detailed map of the area with trails, landmarks, and water prominently marked, will be developed.

2. Interpretive Programs. In general, the interpretive program will present an integrated program based on the themes below. It is visualized that the outdoor interpretive devices will mostly be vandal-proof types involving routed aluminum and metal photo signs, with some routed wood signs. Experience with the present interpretive device will help dictate future use. Nature trails, both long and short, guided and unguided, will be developed. Museum exhibits, display exhibits, and audio-visual materials will be used in areas which offer maximum protection from vandalism.

a. Themes

Geology. The great Keystone thrust fault and overturned sandstone formations. How they occurred and contributed to the present landscape.

Ecology. The various life communities present, how they interrelate with each other, the geology, and primitive man.

History. Events of man's past use of the area as indicated by Indians, Spanish, mountain men, Mormons, and cattlemen's history.

Fauna. The unusual desert animals to be observed, such as the Desert Bighorn, and a wide variety of bird life.

b. Interpretive Center. The Interpretive Center is conceived of as a multi-purpose building with space for a lobby, information desk, toilets, exhibits, small auditorium, administrative offices, and storage. Interpretive exhibits here will be general in scope and somewhat more complex than the interpretive devices along the road system, because of the vandalism problem on the roads. The exhibits should be quite graphic, with use of motion to show development and interrelationship. Movies, models, museum exhibits, slide programs, mechanical devices, and a native plant garden are suggested to tell the stories.

Geology. The story of the depositions and later earth movements over the broad region that formed the Red Rock area.

Ecology. The interrelationship of the various life communities with each other, and the geology and the uniqueness of the area in this regard.

History. The tools, arts and crafts of the people inhabiting the area, particularly in past times, and the ecological niche man has occupied throughout time here.

General. The interpretation can be bolstered and emphasized at the Interpretive Center through landscaping with native plants, use of pictograph and petroglyph reproductions and local artists' paintings of the area in the building decor, ample glass to utilize the view, and identification devices to show points of interest. An adjunct to the interpretive program will be an outdoor amphitheater-campfire type arrangement seating 50 to 75 people for night use in presenting programs of interest.

Public Relations. An exhibit on the concepts and programs of the Nevada Park System, Clark County, and the Bureau of Land Management will be presented in the building.

c. Sandstone Quarry

History. Using the mescal pits, cave, and petroglyphs available in the area, the time-depth and history of the Indian cultures in the area will be told.

Salvage excavation will be done on the mescal pits and the cave. No trail system is visualized, but an introductory device showing where the sites are would help preserve the feeling of discovery and exploration now prevalent in the area.

d. Brownstone Area

History. The emphasis will be on horticulture as practiced by the Paiutes and as possibly shown by the petroglyphs and pictographs in the area. The native art form will be stressed also.

e. Crestline Drive. See Interpretive Development Drawing for approximate location of stops.

Geology

Stop A. The story of the Cambrian formations as told through a good fossil deposit.

Stop B. An intimate look at the thrust plate and what it accomplished.

Stop C. Differential erosion as shown by the "Natural Bridge," pot holes, and other intimate erosional features of the sandstone area.

Stop D. The effect of geology on the plant life, as shown by growth in the canyons that cut back into the escarpment.

Stop E. The story of water in the desert, as shown by the location of Las Vegas and the valley ranches.

Stop F. Mineralization and use in the area as shown by the mining activity at the Blue Diamond mine.

Ecology

Rams-head: Pinyon-juniper plant community and its place in the ecological scheme.

History

Rams-head: History of Las Vegas and the ranching activities in the area, as shown by the town itself and the ranches visible in the valley below. Will be integrated with geologic story at same stop.

f. Red Rock Scenic Drive

Ecology

White Rock. The black brush community, its significance in desert ecology, and the delicacy of the desert.

Pine Creek. The ponderosa pine - ash community, stressing its part in the desert ecology, particularly the rareness of this particular situation, the reasons for it, and the need for its preservation in the natural area.

Stop G. The Joshua tree - creosote bush ecological community, with emphasis on other deserts as a comparison with the Mohave desert and the various plants that replace one another in the ecological schemes of similar deserts.

Willow Springs. The place of primitive man in the ecology of the area and his use of the various plant communities, as shown by the material remains in the Willow Springs area (mescal pits, pictographs, campsites, etc.) and the varied plant life in one small area (to include Lost Creek). Further salvage excavation is needed to preserve the information available here.

g. Dedication Point. The present interpretation in place here will be retained to tell the overall story of the area and to commemorate the recent history of the area.

h. Wildlife

Somewhere in the area, where feasible, an observation point, possibly with a blind, will be established to observe the bird life, small animals, and the Desert Bighorn. Nighttime observation near a heavily used water hole may provide the best opportunity.

i. Interpretive Publications. The interpretive publications will be cooperative ventures with local professional experts on the subjects.

Ecology. A leaflet on the ecology of the Pine Creek area will be made available. This will be a detailed report written for the layman, to be distributed at Pine Creek and at the Interpretive Center.

History. A popular account of the pre-history and history of the general region, with emphasis on the Red Rocks, will be made available at the Interpretive Center.

3. Visitor Protection. Although much of the Red Rock area is wild and precipitous, inviting people problems, it is, fortunately, within 15 miles of Las Vegas, where many protective services and operations are readily available. Development itself, with its roads, trails, interpretive and information programs, will do much to alleviate present visitor protection problems and cut down future ones.

a. Search and Rescue. Training of key personnel in methods and management of search and rescue is essential because of the nature of the area and its visitor use. Cooperative agreements and preplanning will be done with local groups and concerns that can be used in search and rescue. Available are such people as state and county law enforcement agents, the U. S. Air Force, rescue squads, helicopter and airplane service companies, Explorer Scout groups, etc. that can be utilized.

b. Law Enforcement. This program will be carried out in close cooperation with the Clark County authorities. Deputization of key recreation area personnel will be done if possible.

c. Patrol. Periodic patrol of the area day and night, seven days a week, keyed to the use patterns that develop, will be an essential part of the visitor protection program.

d. Communications. Area vehicles and the Interpretive Center will be tied to the present BLM radio net. The Interpretive Center and administrative area will be tied to the local telephone system.

e. Sanitation. U. S. Public Health Service standards will be followed in all governmental and concessionaire developments and water supplies to insure visitor health protection.

f. Fire. A program of fire suppression and presuppression for both the natural area and buildings will be established. This will involve training of area personnel in fire hazard inspection and fire control, and the program will be integrated with the present regional programs in effect by BLM, State, and local agencies.

g. First Aid. Training of area personnel in First Aid methods will be considered essential. First Aid kits will be basic equipment in all area vehicles and manned facilities.

h. Traffic Control. Bureau of Public Roads standard traffic control signing and marking will be used.

4. Commercial Accommodations

a. Lodge Area. (See the General Development Drawing for the location.) The commercial accommodations available at Las Vegas, Blue Mountain, and Mountain Spring are adequate to meet the need for many years to come. The proposed lodge area is scheduled in the last development phase. Visitor facilities would include swimming pool, hiking and riding trails, scenic tours, and other resort type facilities as determined compatible.

b. Dude Ranch. It is planned eventually to convert the present guest ranch operation at the south end of the area (see the General Development Drawing) to a concessionaire-operated riding stable.

c. Public Transportation. It is envisioned that, with the completion of the road system in the area, a demand for use of the roads by public carriers will appear. This use will be controlled by permit under applicable Federal and state laws.

5. Recreation Activities

a. Sightseeing. Basic to the sightseeing activities of the visitor is the road system with its pullouts and interpretive devices. Roads will be designed to make maximum use of the dramatic scenery present. The pullouts will be plentiful and at strategic spots to take advantage of visitor needs in relation to the views.

b. Picnicking. Formal picnicking developments will be provided in places where the best recreation advantages of the area are available to the visitor. Informal "tail gate" and roadside picnicking will not be discouraged, however, so long as it is compatible with sanitation and fire control programs.

c. Camping. Formal camping facilities will be provided for both group and family type camping. Group camping will be on a reservation basis if demand dictates. Area personnel should be educated to assist campers in the basic camping techniques where needed. Informal camping will be encouraged in the wild areas.

d. Hiking. Use of all types of trails will be encouraged. Trail systems ranging from nature trail types to wilderness types will be developed. Signing systems and registration stations will be set up for the more difficult hikes to aid in the visitor protection program.

e. Rock Climbing. Although the area is not feasible for technical climbs because of the friable sandstone, there will be some "rock scrambling" type of cross-country hiking. All attempts will be made to make areas of this sort available by signed trail so as to assist the visitor protection program.

f. Horse Riding. Stables will be available in the south end of the recreation area, as mentioned previously. Signed trails and campsites will be developed for the horseman. Facilities such as corrals, water troughs, and hitching rails will be provided.

g. Hunting. It is recommended that hunting be allowed during seasons established by the State Fish and Game Commission. Areas within and adjacent to developed recreation sites shall be closed to hunting.

h. Target Practice. An archery range will be developed in connection with the La Madre development. Use of the facilities by individuals and groups will be on a reservation basis if demand dictates. A free use rifle range will be established outside the general area to the east, accessible to Charleston Avenue. The entire area shall be closed to the use of firearms except during established hunting season. Target practice with guns shall not be allowed in the area at any time.

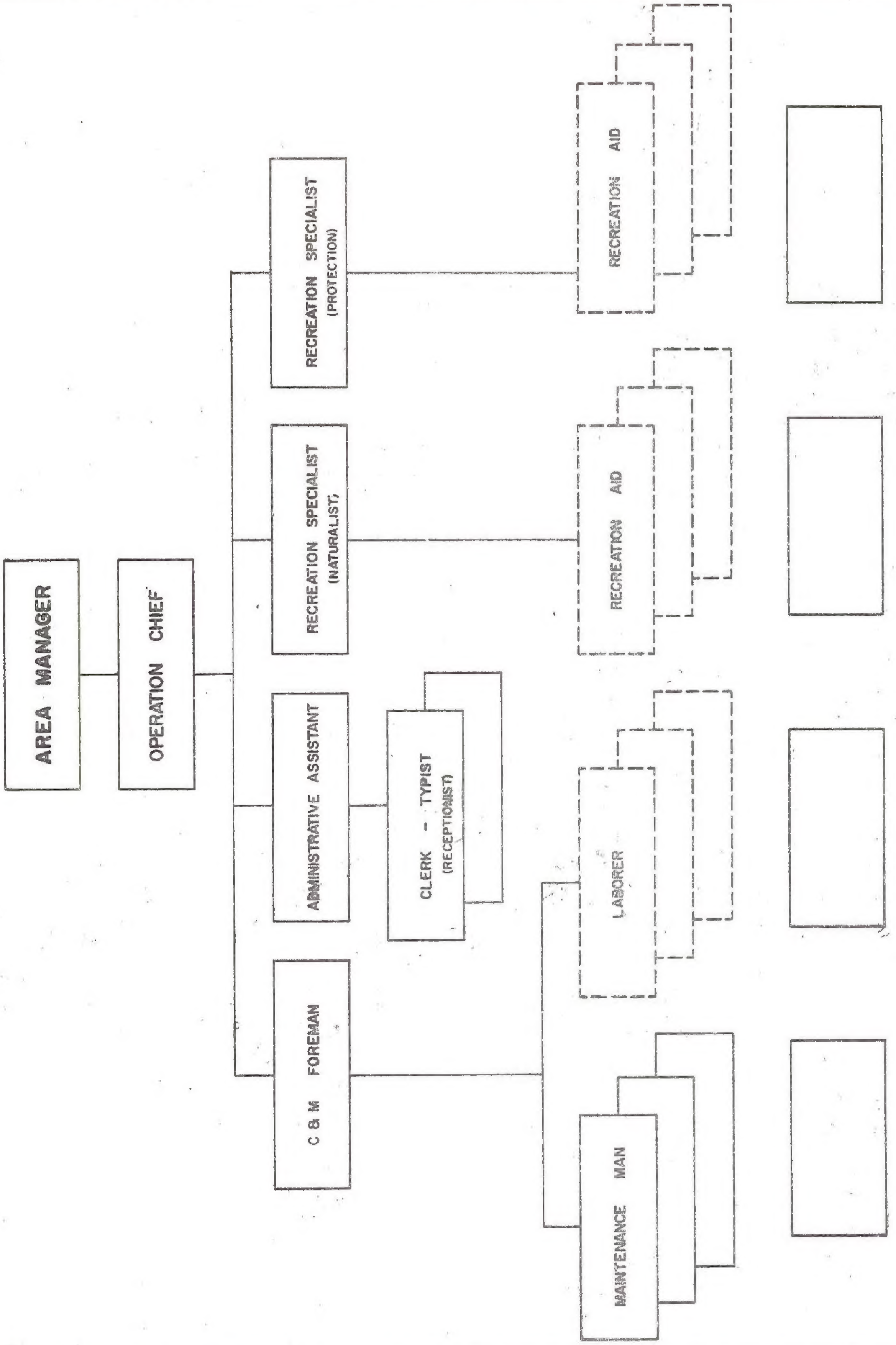
i. Rockhounding. This program will offer no problems, for there is little petrified wood in the area; and the fossils present are mostly marine and of little scientific significance or of value to the rockhound. No attempts will be made to encourage or discourage this activity.

j. Four-wheel Drive Sightseeing. Use of four-wheel drive vehicles will be encouraged on the more primitive roads in the south end of the recreation area and in the Brownstone area dry washes, at least until a road is built into the latter area. Only signing is indicated to facilitate the program.

k. Outdoor Theater. An area will be earmarked for possible development as an outdoor natural theater, to be operated by a non-profit organization under permit if the operation and development proves feasible and compatible with the recreation area.

Section C

ADMINISTRATIVE MANAGEMENT



LEGEND

Permanent Staff ▭

Temporary Staff ⬚

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
IN COOPERATION WITH
NEVADA STATE PARK

ORGANIZATION CHART

Part of Recreation Management Plan

RED ROCKS CANYON RECREATION LANDS

UPDATED	
NAME	DATE

RECOMMENDED ____ DISTRICT MANAGER

APPROVED ____ STATE DIRECTOR

APPROVED Eric R. Cronkhite NEVADA STATE PARK ADMINISTRATOR

SCALE

DATE SHEET 3 OF 6

DRAWING NO.

Section C

ADMINISTRATIVE MANAGEMENT

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1. STAFF REQUIREMENTS
2. ORGANIZATIONAL STRUCTURE
3. ADMINISTRATIVE FACILITIES
    a. STAFF HOUSING
    b. COMMUNITY FACILITIES
    c. OFFICE AND OTHER ASSOCIATED FACILITIES
4. CONCESSIONER

Section C

ADMINISTRATIVE MANAGEMENT

1. Staff Requirements. Following are the personnel needed to make operational the plans and programs outlined under the Visitor Management and Resource Management sections. The phasing-in of these personnel is shown on the organizational drawing.

AREA MANAGER is responsible for the overall management of the Red Rock Canyon Recreation Area, in addition to his normal responsibilities for the entire Resource Area. He will be quartered in the District Office.

OPERATIONS CHIEF is responsible for the planning, development, and operations of the area. He should have considerable experience in park management and be capable of supervising people. Upon his shoulders will rest the prime responsibility for implementing the plans and programs outlined in this document. He will have office space in the Interpretive Center.

RECREATION SPECIALIST (Protection) is responsible for administering the resource management and the visitor protection program. Programs he will be responsible for include: (1) resource management; (2) law enforcement; (3) search and rescue operations; (4) patrols; (5) supervision and inspection of concessioner operations; (6) fire protection (in cooperation with the District fire representative); (7) fee collection; and (8) others. He will have office space in the Interpretive Center.

RECREATION SPECIALIST (Naturalist) is responsible for administering the visitor use program including: (1) the planning, development, and placement of information and interpretive material and facilities; (2) presenting fireside talks; (3) conducting tours; (4) development of public relation programs; and (5) others. He will have office space in the Interpretive Center.

ADMINISTRATIVE ASSISTANT is responsible for bookkeeping, clerical services, and other similar administrative support programs for the area. He will have office space in the Interpretive Center.

CLERK-TYPIST will work under the supervision of the administrative assistant but will provide clerical support for the entire staff. Space will be provided in the Interpretive Center for this person.

RECEPTIONIST will be primarily responsible for giving information and direction to the visitor in the Interpretive Center; however, she will also provide clerical support during stack periods. She will be under the supervision of the administrative assistant but will also receive direction from the naturalists. She will operate the information desk in the Interpretive Center.

CONSTRUCTION AND MAINTENANCE FOREMAN is responsible for the maintenance, repair, and minor construction programs in the area. He will have office space in the maintenance area.

MAINTENANCEMEN (Three permanent positions). Each will have separate responsibilities as follows: (1) One is responsible for maintaining the cleanliness of all facilities in the area including collection and disposal of garbage; (2) the second one is responsible for repair and servicing of all facilities and equipment; and (3) the third is in a caretaker role. He is responsible for preventing visitors from entering the natural area in the north fork of Pine Creek. His primary duties will include law enforcement, providing first aid treatment, and giving information and interpretive materials to visitors. He will be stationed at Pine Creek during working hours and will have permanent living quarters in the administrative area.

2. Organizational Structure (See the organizational drawing.)

3. Administrative Facilities

a. Staff Housing

BLUE DIAMOND ADMINISTRATIVE AREA

1 Residence (3-bedroom) for use of the caretaker and his family

1 Apartment building (4-unit) for use of temporary employees during heavy use season

MOUNTAIN SPRING ADMINISTRATIVE AREA

1 Apartment building (2-unit) for use of temporary employees during heavy use season

b. Community Facilities. All the community facilities which are necessary to care for the physical, cultural, and social needs of the area staff are available in Las Vegas, which is less than 15 miles away.

c. Office and Other Associated Facilities

INTERPRETIVE CENTER

Office space for 6 permanent and 2 temporary employees

Storage space for office supplies and interpretive materials

Contact station for fee collection and control

BLUE DIAMOND ADMINISTRATIVE AREA

Maintenance and repair shop

Storage for signs, tables, grills, etc., which will be dismantled during off season

Vehicle storage

Office space for four permanent employees

MOUNTAIN SPRING ADMINISTRATIVE AREA

Fee collection and information distribution facility

Equipment storage facility

Storage for search and rescue equipment

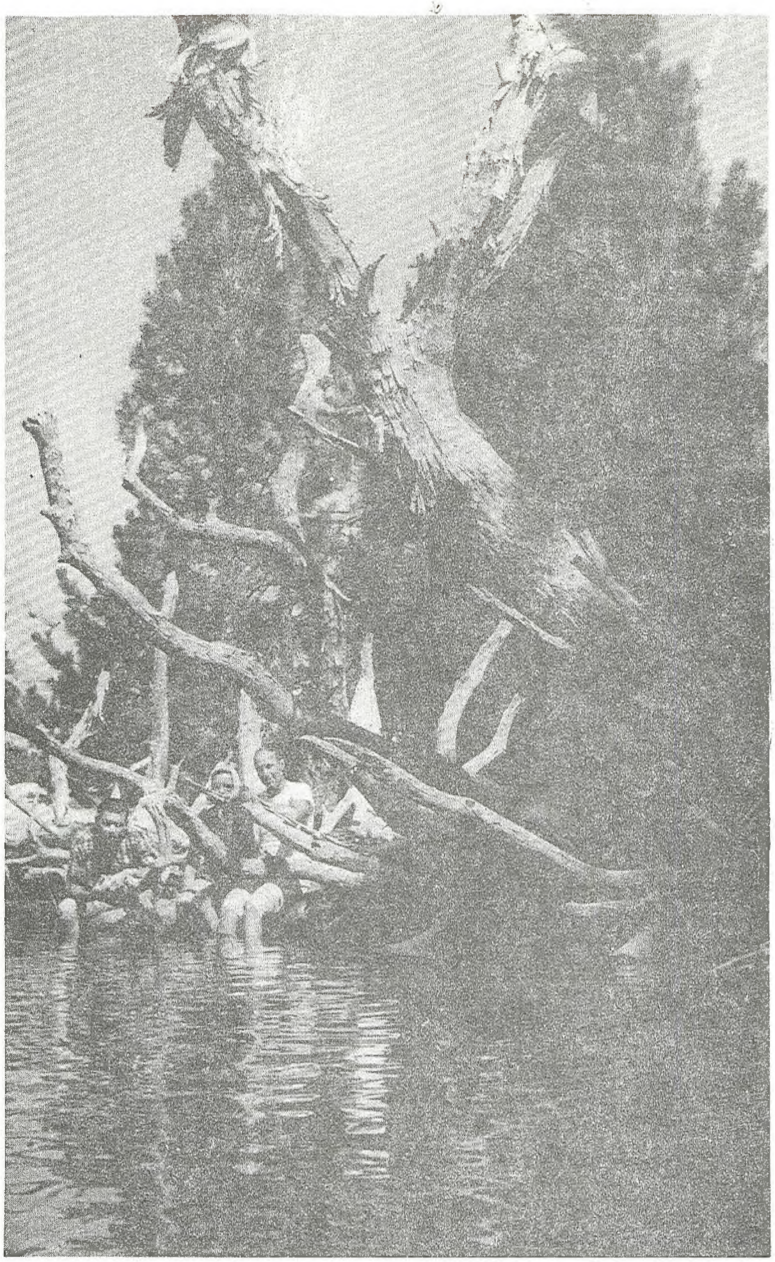
4. Concessioner

a. Lodge Area. All administrative facilities including staff housing, office space, and other related facilities will be located within this area, as depicted on Development Area #2 Drawing. On-site staff housing will be discouraged.

b. Dude Ranch. All administrative facilities will be located within the area, as depicted on Development Area #2 Drawing. Housing will be provided for the wranglers but other service people should be housed off-site.

Section D

GENERAL DEVELOPMENT PLAN



Pot holes formed in the
sandstone at higher
elevations offer relief
to the hiker's sore feet.

Section D

GENERAL DEVELOPMENT NARRATIVE

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2. CHARACTER OF DEVELOPMENT
3. DEVELOPMENT PHASES
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    b. CRESTLINE SCENIC DRIVE
    c. BROWNSTONE LOOP ROAD
5. TRAIL SYSTEM
6. UTILITIES SYSTEMS
    a. WATER SYSTEM
    b. IRRIGATION SYSTEM
    c. GARBAGE AND REFUSE
    d. SEWERAGE SYSTEM
    e. TELEPHONE SYSTEM
    f. RADIO SYSTEM
    g. POWER SYSTEM

GENERAL DEVELOPMENT NARRATIVE

1. Development Objectives. All recreation developments in the Red Rock area shall be designed to meet resource, visitor, and administrative management needs as outlined in Sections A, B, and C of this plan. Developments which are designed to meet other resource use needs will comply with the constraints as established in this plan.

2. Character of Development. All buildings and associated structures shall follow the theme of the old western ranch-style structures, with low, massive lines. Native materials, especially sandstone, shall be the preferred materials. All structures, including roads, shall be designed and constructed so that they blend into the surrounding landscape. The goal is to retain the landscape as the dominant feature and to subdue the physical developments which must be placed on the land to accommodate recreation and other uses.

3. Development Phases. The term "phase" is used in this plan to represent a logical sequence for facility development (see the general development drawings with overlays). The first phase represents the recreation facilities which should be included in the initial development. The second phase would follow in priority and so forth. This does not mean that all the sites in Phase I will be developed to capacity before development of Phase II begins. Each site should be designed to meet capacity conditions but development should be done in installments. Future trend data on visitor use will provide a better base to determine visitor preferences than we now have; therefore, priority should be given to developing a sound visitor use data base and keying the development program to the visitor trends. This will be difficult initially because there are inadequate facilities available on which objective trend data can be based; but as facility development increases, trend data will become more and more important in guiding the development program.

4. Road System. The road system is schematically located on the General Development Drawing and is located more precisely on the Development Area Drawings. The final road alignment will be established after the road has been placed in the District program and starts through the normal design-construction program cycle. The final alignment will conform as nearly as possible to the alignment shown in this plan. During the final layout of the road, pull-offs and waysides will be selected and will be designed and constructed at the same time the road work is done. There should be an average of one pull-off per mile. The pull-offs may vary from 5 to 30 parking spaces, depending on the space available and the quality of the recreation attraction.

a. Red Rock Scenic Drive

Standard DN-24' surface (paved)

Length Approximately 15 miles

Justification. The Red Rock Scenic Drive will provide access to the following recreation sites: Sandstone Quarry, White Rock Springs, and Rocky Gap. It will provide an intimate view of the brilliant red sandstone formations in the Calico Hills, and spectacular views down the valley of the Red Rock escarpment. It will also serve as the first segment of the Crestline Scenic Drive. It also provides access to the Brownstone area.

b. Crestline Scenic Drive

Standard DN-24' surface (paved)

Length Approximately 20 miles

Justification. The Crestline Scenic Drive takes the visitor into high country of the Red Rocks, where it is cooler and the rugged beauty of the Red Rock escarpment is seen firsthand. The road provides access to numerous scenic overlooks, trails, and a major recreation complex at Rams-head. This road will provide access into the spectacular high country for the old, young, and disabled, who would otherwise never get this opportunity. The location of this road in the high elevations will increase the length of the use season and will encourage greater local and non-local use during the hot summer months.

c. Brownstone Loop Road

Standard SN-14' surface (graveled)

Length Approximately 3.5 miles

Justification. Actual road construction will include only that portion from the Red Rock Scenic Drive to Brownstone reservoir. The road from Brownstone Reservoir to Charleston Avenue will stay right in the wash and will accommodate 4-wheel drive vehicles only. This road will provide access to the numerous archeological sites found in Brownstone Canyon and will also provide back-country pleasure riding, which is an important recreation activity in this area.

5. Trail System

Standards — 4 ft. width - no surfacing

Length — Approximately 45 miles

General Comments. Only the primary trunk trail system is shown on the Development Drawings. These trails shall be designed and constructed to accommodate both hiking and horseback use. The trail at the base of the escarpment shall also be constructed to permit powered cycle use.

The location of the trails is approximate. The precise location will be established after the trail has been placed in the District program and starts through the normal design-construction program cycle.

Trail wayside rest stations shall be selected at the time the trail is laid out on the ground. These stations shall range from 3 to 4 miles apart.

6. Utilities Systems

a. Water System. See the comments for each development area in Section E.

b. Irrigation System. Based on present information, tree plantings which would require underground irrigation systems are not feasible at this time. If water does become available from underground sources at a later date, tree plantings with accompanying irrigation systems are desirable at all the development sites in the valley area. Priority should be given to Willow Springs Campground and the Sandstone Quarry picnic sites.

c. Garbage and Refuse. All garbage and refuse will be disposed of at the dump area as shown on the General Development Drawing. The dump shall be of the sanitary land fill type.

d. Sewerage System. All sewerage systems except the Lodge Area will be handled with septic tanks and drainage fields. Additional study is needed to determine the type sewerage system needed for the lodge area.

e. Telephone System. Telephone service will be provided at the following locations:

Interpretive Center
Blue Diamond Administrative Area
Mountain Spring Administrative Area
Lodge Area
Dude Ranch

All of these locations except Mountain Spring Administration Area will also have public telephone service. The telephone lines will be placed underground adjacent to the powerlines.

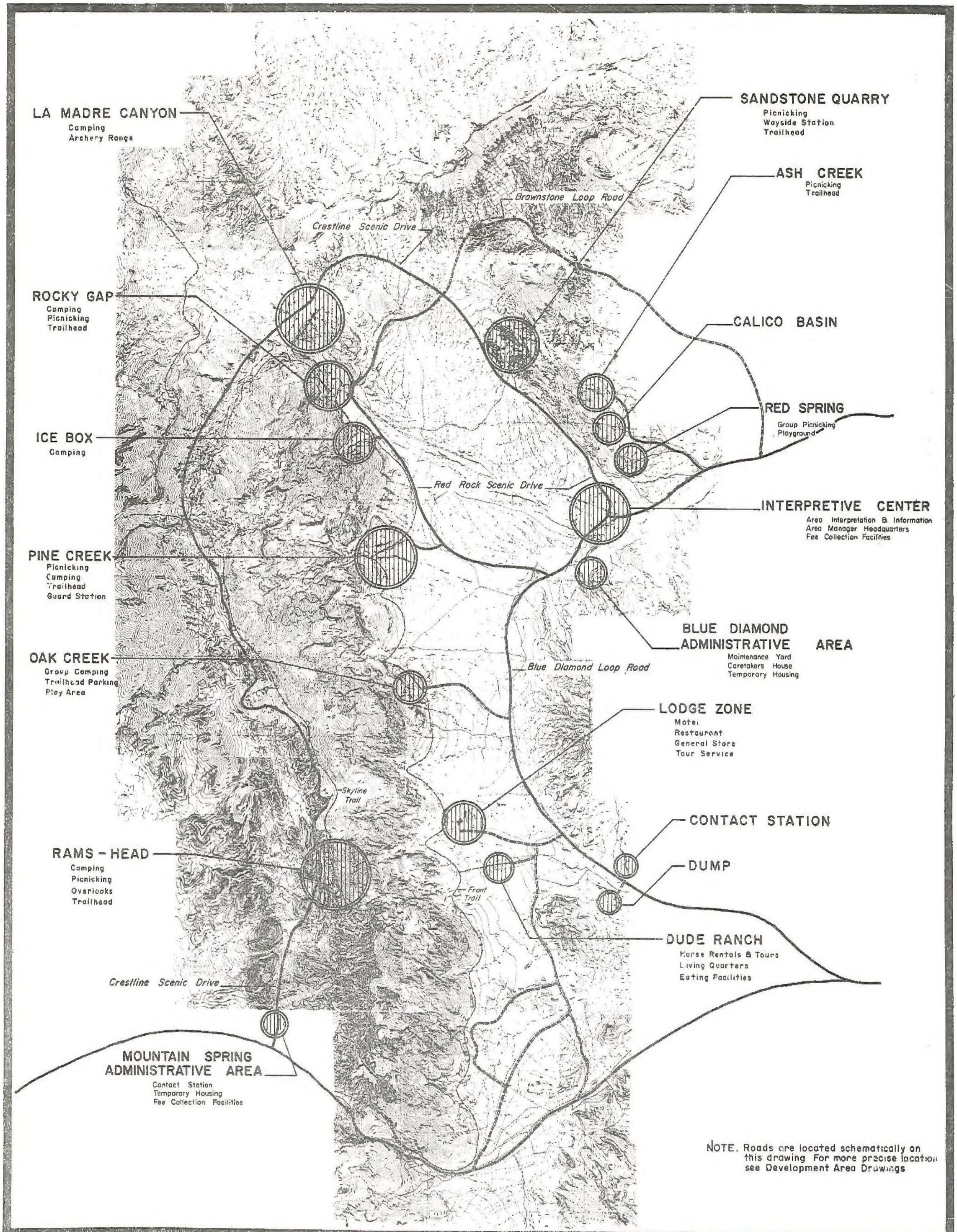
f. Radio System. Permanent radio receiving and transmitting equipment will be installed at the Interpretive Center and the Mountain Spring Administrative Site. All permanent staff vehicles will be equipped with radio equipment. Emergency portable radio equipment will be on hand at the Interpretive Center and Mountain Spring Administrative Area. The radio system will operate in the District net.

g. Power System. Power service will be supplied to the following locations:

Interpretive Center
Blue Diamond Administrative Area
Mountain Spring Administrative Area
Lodge Area
Dude Ranch

Power for the Interpretive Center and the Blue Diamond Administrative Area will be brought in from a source near Red Springs. The existing aerial lines which service the Lodge Area and the Dude Ranch will be placed underground. The aerial lines which service the Mountain Spring Administrative Site will remain in place.

Power will be needed to pump water at most of the recreation development sites. In most of these cases, an L.P. gas-powered generator will be the preferred source of electrical power.



NOTE. Roads are located schematically on this drawing. For more precise location see Development Area Drawings

LEGEND	
Primary Road System	———
Secondary Road System	▬ ▬ ▬
Jeep Trail	— — —
Primary Hiking Trails	- - - -
Development Areas	◍

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
IN COOPERATION WITH
NEVADA STATE PARK

GENERAL DEVELOPMENT DRAWING

Part of Recreation Management Plan

RED ROCKS CANYON RECREATION LANDS

UPDATED	
NAME	DATE

RECOMMENDED Dennis E. Hess
DISTRICT MANAGER

APPROVED Nolan F. Keil
STATE DIRECTOR

APPROVED Eric R. Cronkhite
NEVADA STATE PARK ADMINISTRATOR

SCALE 1 1/2 0 1 2 3 MI.

DATE

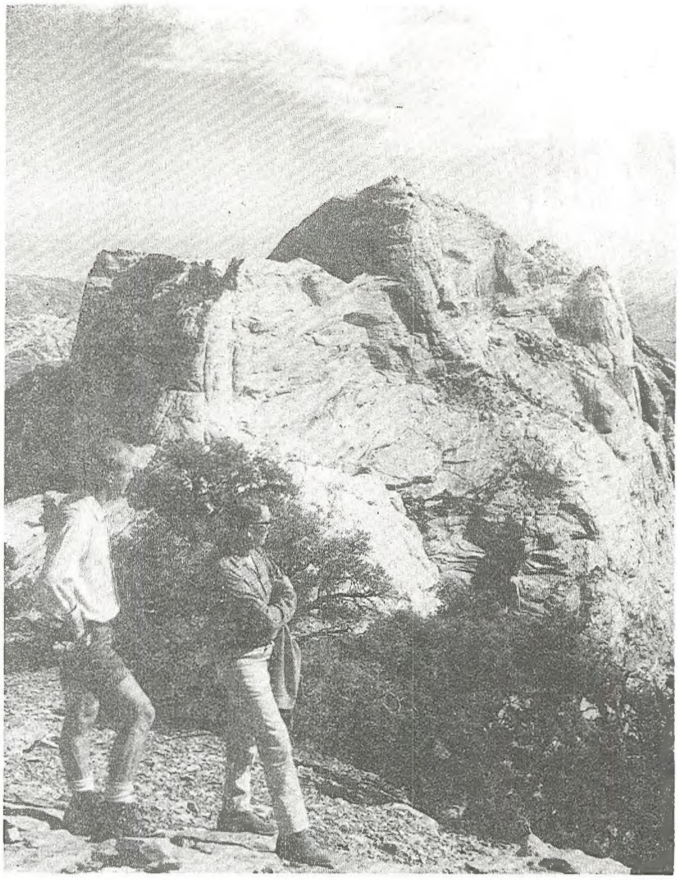
SHEET 4 OF 6

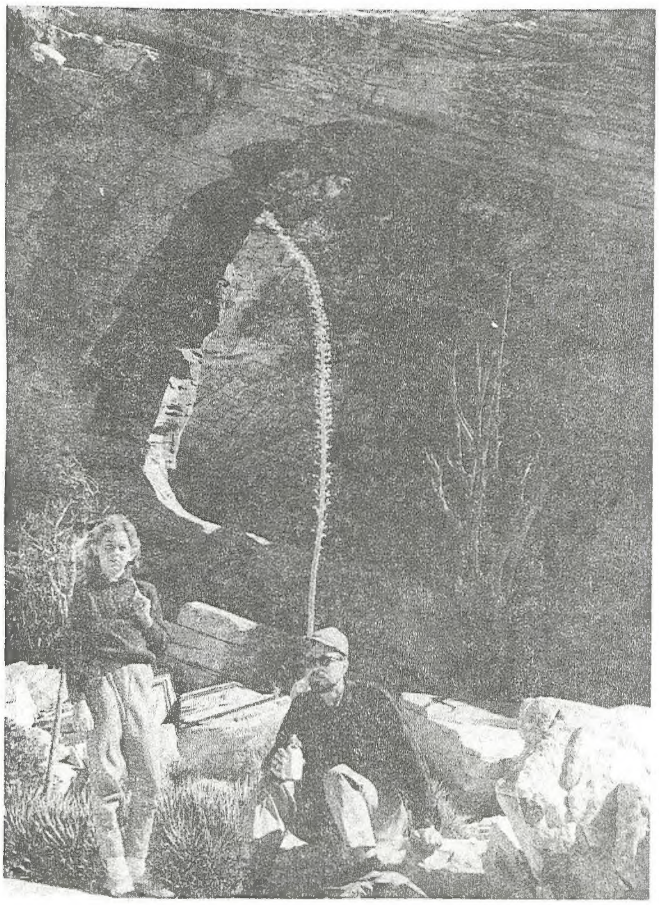
DRAWING NO.

Section E

DEVELOPMENT AREA PLAN

Hiking is one of the major activities in the Red Rocks area





Picture window natural arch is a favorite hiking objective

Section E

DEVELOPMENT AREAS NARRATIVE

CONTENTS

1. RED SPRINGS
2. CALICO SPRINGS (GIRL SCOUT ORGANIZATION CAMP)
3. ASH CREEK
4. SANDSTONE QUARRY
5. WHITE ROCK
6. WILLOW SPRINGS
7. LOST CREEK
8. ICE BOX
9. PINE CREEK
10. OAK CREEK
11. INTERPRETIVE CENTER
12. BLUE DIAMOND ADMINISTRATIVE AREA
13. DUDE RANCH
14. RAMS-HEAD
15. MOUNTAIN SPRINGS ADMINISTRATIVE AREA
16. LA MADRE CANYON
17. LODGE AREA

Section E

DEVELOPMENT AREAS NARRATIVE

1. Red Springs

a. Facilities
2 group picnic units (150 people/unit)
Sanitary facilities
80 parking spaces
Softball field
Volley ball court
2 group fire circles

b. Water
Primary source - Well
1st alternate source - Red Spring
2nd alternate source - Ash Creek
Water needs - 3,000 gal/day (flush toilets)
" " 900 " (vault toilets)

c. General Comments. If adequate water can be obtained, serious consideration should be given to sprinkling the grass in the large, flat area and embarking on a tree-planting program with accompanying underground irrigation system. The facilities will be handled on a reservation basis.

d. Justification. There is a demonstrated need for additional group facilities in the southern Nevada area. For example, the group areas in the adjacent National Forest are booked up for as much as two years in advance. The Red Spring site has the physical amenities necessary for a group site, which includes adequate tree cover and a large, level area for active sports. The area is isolated from other recreation use areas. Large groups create much noise and disturbance, which is not compatible with family camping and picnicking.

2. Calico Springs (Girl Scout Organization Camp)

a. Facilities
Sanitary facilities
Active play area

b. Water
Primary source - well
1st alternate source - Calico Spring
2nd alternate source - Ash Creek
Water needs - 2,000 gal/day (flush toilet)

c. General Comments. This development will be operated as a day camp operation. Overnight facilities will not be constructed.

d. Justification. The site is presently owned by the Girl Scouts. This type use is considered compatible with the other recreation uses in the area.

3. Ash Creek

a. Facilities
70 family picnic units
Trailhead (10 parking spaces)
Sanitary facilities

b. Water
Primary source - Well
1st alternate source - Ash Creek
Water needs - 2,800 gal/day (flush toilet)
1,000 " (vault toilet)

c. General Comments. The picnic unit arrangement should have a good mixture of single family units and multi-family units (space for three or four families together).

d. Justification. This site is in a secluded location which offers an excellent opportunity for family picnicking. There are excellent opportunities for hiking, sightseeing, and nature trails in the immediate vicinity. During most of the year there is live water in Ash Creek. There is excellent overhead cover. The area is shaded by the adjacent hill early in the afternoon.

4. Sandstone Quarry

a. Facilities
190 family picnic units
Wayside exhibit
Trailhead (20 parking spaces)
Sanitary facilities

b. Water
Primary source - well
1st alternate source - haul water in
2nd alternate source - dry picnic area
Water needs - 7,600 gal/day (flush toilets)
3,000 " (vault toilets)

c. General Comments. It will most likely be necessary to provide artificial shade facilities in this area. Except for the primary "trunk" trail, there should be little trail development in the immediate area. Visitors should be encouraged to roam and explore without use of trails.

d. Justification. There are several sites suitable for intensive development within this area. There are excellent opportunities for hiking, sightseeing, and nature walks. There are several archeological sites in the area which will be protected and interpreted for visitor enjoyment.

5. White Rock

a. Facilities

Overlook (25 parking spaces)
Photo information facilities
Interpretive exhibit
10 family picnic units
Sanitary facilities

b. Water

Primary source - White Rock Spring
Alternate - no water provided
Water needs - 150 gal/day (vault toilet)

c. General Comments. It is anticipated that this site will contain one central parking area with the above facilities spread around it.

d. Justification. This is the best point in the Red Rocks to photograph the escarpment. There are mescal pits and other archeological remains in the immediate area. There are excellent spots for picnic units among the large boulders and pinyon trees. It is an excellent location for interpreting the black brush plant community.

6. Willow Springs

a. Facilities

110 family camp units
Trailhead (20 parking spaces)
Interpretive exhibit

b. Water

Primary source - existing well
Secondary source - Willow Springs
Alternate source - Lost Creek Spring
Water needs - 11,000 gal/day (flush toilets)
4,400 " (vault toilets)

c. General Comments. The present road which passes through this site will be abandoned when the Crestline Drive is completed, but this may be several years. The site should be designed under the assumption that the through road will be abandoned, but provisions must be made for interim through traffic use. Providing water is available, a tree planting with accompanying underground irrigation system should be installed in this area. The existing 20-family picnic units can easily be converted to camp units. Picnicking should be encouraged in this area until it is evident that it is not compatible with camping.

d. Justification. The terrain is favorable for campground development. There are excellent opportunities for hiking, sightseeing, nature walks, etc. There are several archeological sites within the area. There is a known water supply.

7. Lost Creek

a. Facilities
50 family picnic units
Sanitary facilities

b. Water
Primary source - Lost Creek Spring
1st alternate source - Willow Spring well
2nd alternate source - Willow Spring
Water needs - 2,000 gal/day (flush toilet)
750 " (vault toilet)

c. General Comments. This site will be the walk-in type. Parking facilities will be provided on the Willow Springs side of the wash. A primitive service road will be provided across the wash for maintenance and garbage collection purposes. This road will be chained off to prevent public use. Every effort should be made to preserve the existing vegetation including release of adequate water from the spring development to maintain the streamside vegetation.

d. Justification. The site has excellent overhead cover. The site is nestled against the north slope of a high escarpment which provides early afternoon shade. There are excellent opportunities for hiking, sightseeing, and nature walks. There is a known source of water.

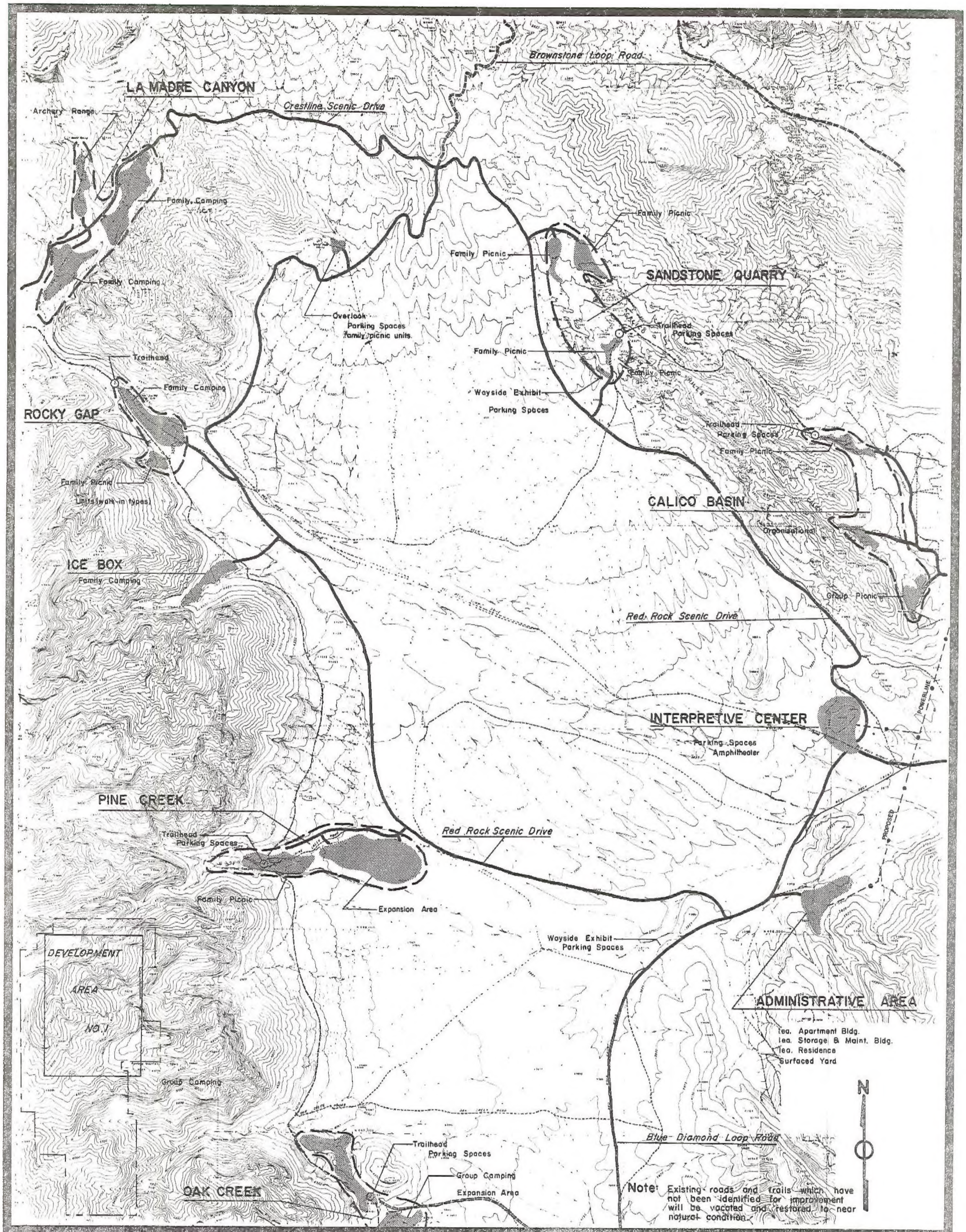
8. Ice Box

a. Facilities
60 family camping units
Sanitary facilities

b. Water
Primary source - well
Alternate source - Lost Creek Spring
Water needs - 6,000 gal/day (flush toilet)
2,400 " (vault toilet)

c. General Comments. Ice Box Canyon derived its name from the coolness of the canyon. The development site extends up the canyon and will benefit from the cool downdrafts which pass through the canyon. This is one of the choice development sites.

d. Justification. The site is in the mouth of a narrow canyon which provides early afternoon shade. There is dense vegetative cover; not high enough for overhead cover but will provide excellent buffers between units. The terrain is suitable for camp development. There are excellent opportunities for hiking, sightseeing, and nature walks.



Note: Existing roads and trails which have not been identified for improvement will be vacated and restored to near natural condition.

LEGEND	
Primary Road System	▬▬
Secondary Road System	═══
Jeep Trails	┉┉┉
Primary Hiking Trails	- - - -
Development Area Boundary	— —
Intensive Use Area	▨

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
IN COOPERATION WITH
NEVADA STATE PARK

DEVELOPMENT AREA NO. I

Part of Recreation Management Plan

RED ROCKS CANYON RECREATION LANDS

UPDATED	
NAME	DATE

RECOMMENDED ______________
DISTRICT MANAGER

APPPOVED Nolan F. Keil
STATE DIRECTOR

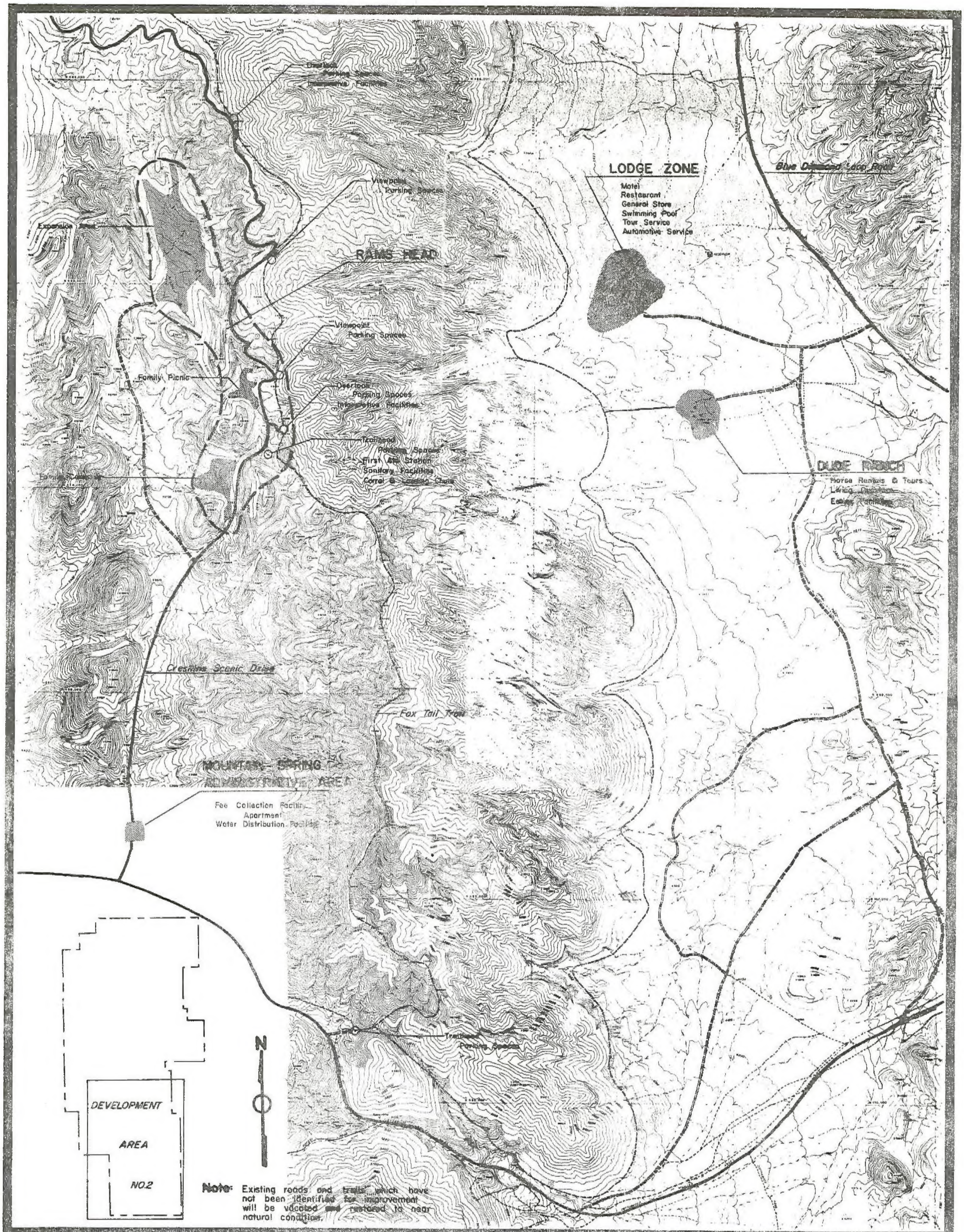
APPROVED Eric R. Cronkhite
NEVADA STATE PARK ADMINISTRATOR

SCALE 2000 1000 0 2000 4000 6000 FT.

DATE

SHEET 5 OF 6

DRAWING NO



Note: Existing roads and trails which have not been identified for improvement will be vacated and restored to near natural condition.

LEGEND

Primary Road System	▬
Secondary Road System	═
Jeep Trails	═
Primary Hiking Trails	- - -
Development Area Boundary	— —
Intensive Use Area	▨

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
IN COOPERATION WITH
NEVADA STATE PARK

DEVELOPMENT AREA NO. 2

Part of Recreation Management Plan

RED ROCKS CANYON RECREATION LANDS

UPDATED

NAME	DATE

RECOMMENDED Dennis P. Hess
DISTRICT MANAGER

APPROVED Nolan F. Keil
STATE DIRECTOR

APPROVED Eric R. Cronkhite
NEVADA STATE PARK ADMINISTRATOR

SCALE 2000 1000 0 2000 4000 6000FT.

DATE

SHEET 6 OF 6

DRAWING NO.

9. Pine Creek

a. Facilities
200 family picnic units
Trailhead (20 parking stalls)
Guard station

b. Water
Primary source - well
1st alternate - Pine Creek
Water needs (picnic) -
8,000 gal/day (flush toilets)
3,000 " (vault toilets)

c. General Comments. The initial development should include only the picnic area. The reason for encouraging picnic use rather than camping is to decrease the length of stay in the area and, therefore, decrease the intensity of patrolling which will have to be done to keep visitors out of the Natural Area. Serious thought should be given to controlling the hours of use in this area.

d. Justification. This site has outstanding overhead cover. There is live water in Pine Creek the year around. The site is near a high escarpment which offers early afternoon shade. There are excellent hiking, sightseeing, and nature walk opportunities up Pine Creek Canyon.

10. Oak Creek

a. Facilities
8 group camping units (25 people/unit)
Trailhead (20 parking spaces)

b. Water
Primary source - well
Alternate source - haul water in
Water needs - 5,000 gal/day (flush toilet)
2,000 " (vault toilet)

c. General Comments. This site will be administered on a reservation basis. The area listed for expansion on Development Area No. 1 will not be constructed during the initial development.

d. Justification. The topography is suitable for camp development. The pinyon-juniper offers good overhead cover. There are excellent opportunities for hiking, sightseeing, and nature walks in nearby Oak Creek Canyon. The area is isolated from family use areas. There is adequate level area to develop play fields and similar facilities.

11. Interpretive Center

a. Facilities — Building to house:

- Peak hour visitor load of 500 people
- Office space for 8 employees
- Storage space for office supplies and interpretive materials
- Flush toilet facilities
- Contact station - fee collection and off-duty information distribution
- 120 parking spaces
- 75 seat amphitheater
- Roadside water distribution point

b. Water

Primary source - well
Alternate source - Lost Creek spring
Water needs - 15,000 gal/day

c. General Comments. The primary purpose of the visitor center is to introduce the visitor to the area. All the information and interpretive facilities will be oriented toward "whetting the appetite" of the visitor and encouraging him to personally visit the recreation attractions in the area.

d. Justification. The visitor study indicates that the vast majority of the visitors will enter the Red Rocks via Charleston Avenue. This site will offer an excellent location to intercept the visitor before he gets sidetracked. This site offers an excellent view of the main escarpment and of the Calico Hills. Having the visitor center on the major entrance road will provide for more efficient use of staff personnel in collection of fees, controlling visitor use (particularly target shooting) and in providing better service to the visitor. The site is near sources of electrical power and telephone service. The site is adjacent to the area selected by U.S.G.S. hydrologists as the most likely place in the Red Rock area to locate underground water.

12. Blue Diamond Administrative Area

a. Facilities

- 1 residence (3-bedroom)
- 1 apartment building (4-unit)
- Maintenance and repair shop
- General storage - off-season storage of recreation facilities
- Vehicle storage
- Office space for four employees

b. Water

Primary source - well (same as Interpretive Center)
Alternate source - Lost Creek spring

c. General Comments. The residence should be constructed so that it is clearly visible from the Blue Diamond Loop Road. The design of the structure should be neat and harmonious with the surrounding environment. The purpose of having the residence in view is twofold: first, it will provide a place for visitors to go for emergency needs during off hours when the Interpretive Center is closed; secondly, it may discourage vandalism if people know there is someone present in the area at all times. The remaining facilities should be well camouflaged.

d. Justification. The site is near the highway but yet most of the facilities can be screened from view of the highway by natural barriers. It is near the Interpretive Center, where most of the staff will be housed. It is close to the important utility systems--water, power, and telephone. Its proximity to the major visitor entrance provides an excellent location for providing emergency services.

13. Dude Ranch

a. Facilities
Staff living quarters
Barn, corral, and associated facilities
Sanitary facilities
Rustic restaurant and lobby facilities

b. Water
Primary source - well
Secondary source - spring water
Water needs - 3,500 gal/day

c. General Comments. This will be a day use operation--no overnight facilities for guests. The design of all structures will be reviewed and approved by the area administrator prior to construction.

d. Justification. This site is near the major trunk trail system which provides access to all the canyons along the escarpment and also provides access to the top of the escarpment. The site is near the Blue Diamond Loop road, which is a major traffic artery. The visitor study indicates a large demand for this type service.

14. Rams-Head

a. Facilities
100 family picnic units
100 family camp units
Trailhead (40 parking spaces)
Corral, with loading chute
Sanitary facilities
Overlook (60 parking spaces)
Viewpoint (10 parking spaces)

b. Water
Primary source - pipe water from Mountain Springs
1st alternate source - haul water in
2nd alternate source - water catchment basins
3rd alternate - have visitors pick up water at Mountain Springs
Water needs (picnic) - 4,000 gal/day (flush toilets)
1,500 " (vault toilets)
Water needs (camp) 10,000 " (flush toilets)
4,000 " (vault toilets)

c. General Comments. None

d. Justification. This site is higher than the sites in the valley by more than 2,000 feet. Summer temperatures range from 6° to 10° cooler than at the valley floor. The view down Sandstone Canyon and out over the Las Vegas valley is sensational. Numerous dramatic overlooks are within a short, easy hike from this site. The tree cover is excellent. The intensive use areas are far enough from the steep cliffs area to provide safety for children yet close enough for easy hiking.

15. Mountain Springs Administrative Area

a. Facilities
Apartment building (2 units)
Fee collection station and control point
Water distribution point
Information facilities
Equipment storage facilities

b. Water
Primary source - well
Alternate source - Mountain Springs

c. General Comments. None

d. Justification. This is an ideal location to exercise visitor control and provide assistance to the visitor. The site is adjacent to the small town of Mountain Spring, where basic community services are available for the staff people living at this location. It is essential to have staff and emergency facilities available in the higher elevations. Utilities such as power, telephone, and water are readily available.

16. La Madre Canyon

a. Facilities
230 family camping units
An archery range
Sanitary facilities

b. Water
Primary source - well
Secondary source - La Madre spring
Water needs - 23,000 gal/day (flush toilets)
9,000 " (vault units)

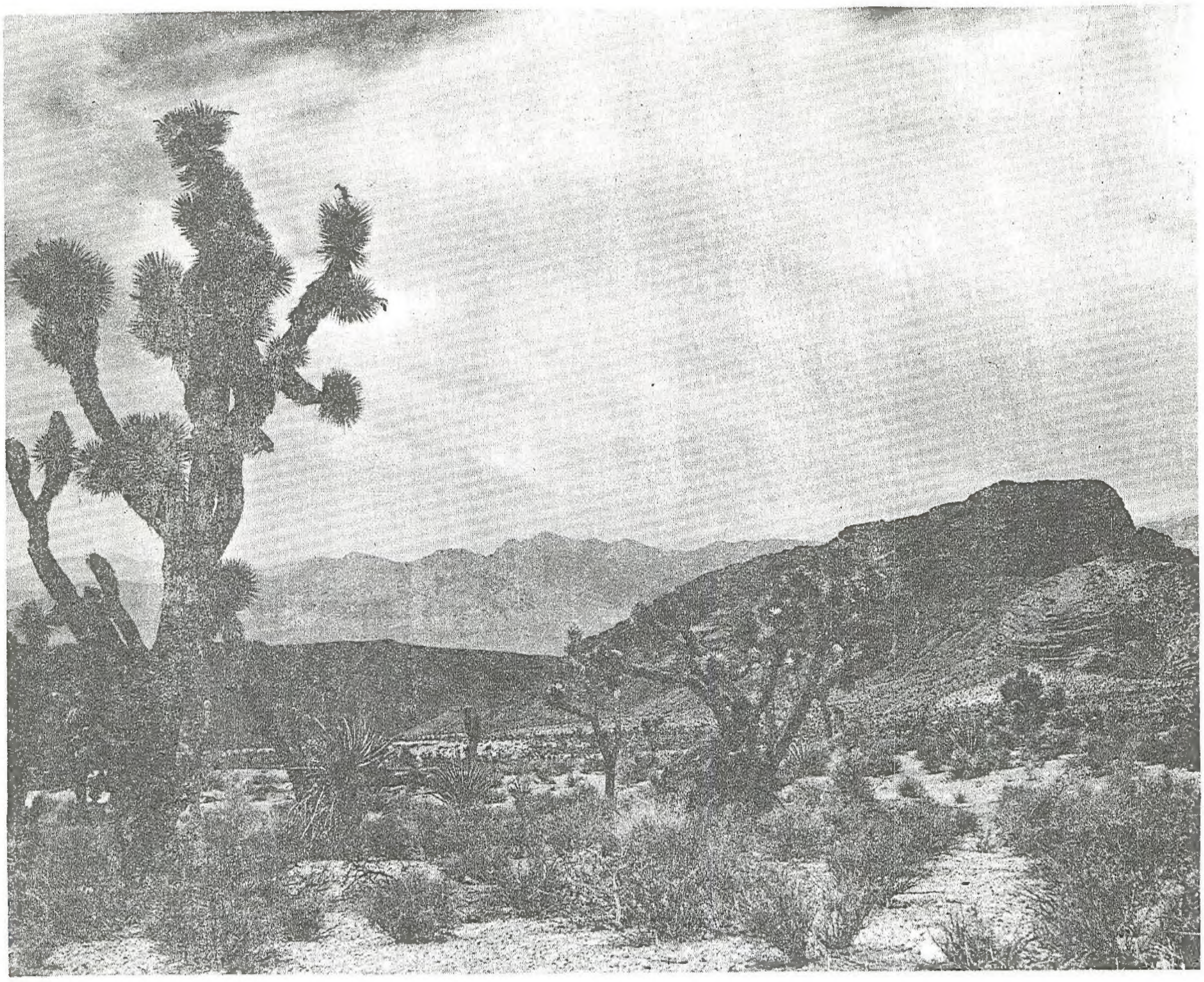
c. General Comments. This is one of the finest campground areas in the Red Rock area.

d. Justification. The site has excellent overhead cover. The terrain is suitable for intensive recreation development. There is a known water supply. There is an excellent opportunity for hiking and sightseeing in the area.

17. Lodge Area. This area has definite potential for a motel-resort type operation, providing the development and management is properly controlled. The exact development which will go into this area has not definitely been determined. The development listed on the Development Area #2 drawing suggests a certain development trend, but a separate study should be undertaken to determine the exact development scheme.

Section F

BASIC INFORMATION



The grotesque forms of the
desert environment offers
a stimulating challenge to
the photographers.

BASIC INFORMATION

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Social - Economic Profile	8-F
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Multiple Use Considerations	18-F
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BASIC INFORMATION

Introduction

The purpose of the basic information section is to bring together the basic data which are necessary to guide the development of the Recreation Management Plan. Not all the basic data that are used to develop the plan are included in this section--only the data which are considered necessary as "back-up" material for the plan.

Refer to the documents listed under item 6, Bibliography, for more detailed information on specific subjects covered in this section, page 20-F.

Physical Profile

1. Terrain. See the base maps for topographic features.

2. Vegetation. The general vegetative types are depicted on the "Vegetation Type" overlay. Vegetation on the lower slopes is typical of the Upper Sonoran Zone. Principal species occurring in this portion of the area are: Joshua trees, creosote bush, agave, yucca, cholla, beavertail and pricklypear cactus, black brush, and white bursage. Within the deep canyon bottoms of the Red Rock escarpment are such undesert-like species as Angelica, ponderosa pine, clubmosses, ferns, single-leaf ash, Turbinella oak, hackberry, and redbud.

Vegetation on the sandstone slopes is very sparse and consists mostly of small groves of ponderosa pine and occasional pinyon or juniper. The upper slopes, which are above and west of the trace line of the Keystone thrust fault, have a rather dense coverage of pinyon pine, juniper, big sage, Gambel oak, cliffrose, Apache plume, Yerba Santa, mountain mahogany, and manzanita.

The north fork of Pine Creek Canyon possesses the most distinctive plant community in the area. This area contains some 10 to 15 endemic plant species which occur in other localities of the Spring Mountain Range only. It is also a refugium for at least two kinds of ferns that occur nowhere else in the state of Nevada, and marks the place of the lowest elevation for ponderosa pine in the Spring Mountain Range.

3. Geologic Features (See the Geologic Features overlay) The major recreation attraction in the area is the Red Rocks escarpment. Other areas of major importance are the colorful sandstone formations in the Calico Hill and Brownstone areas.

An important individual feature is the Keystone thrust which is exposed above the Aztec sandstone for the entire length of the escarpment. The Keystone thrust, dipping moderately westward, is nearly parallel to the beds above and below it. But just south of the prominent bend in strike of the thrust, a deep valley (Red Rock Canyon) reveals that the thrust, steepening downward, transects the Aztec and the underlying beds of the chink, which below the contact with the thrust plate are upturned past the vertical (Longwell 1965).

Picture Window Natural Arch is another geologic feature of great importance in the Red Rock area.

4. Wildlife. There is no comprehensive inventory of the animal life in the Red Rocks area. However, a study recently completed by the Biology Staff of Nevada Southern University, on the "Natural History of Pine Creek Canyon," provides a good insight into the biotic community of the area. Fish life is non-existent.

The biotic community is fairly representative of that found in the southern Nevada area. The exceptions are those animals which range in the fir-pine, bristlecone pine, and the pseudo-alpine communities. Birdlife which is dependent on large, open bodies of water is also absent in this area. A recent study of the southern Nevada area (Bradley and Deacon, 1965) indicates that there are approximately 120 species of amphibians, reptiles, and mammals, and approximately 290 species of birds. Most of these species are found in the Red Rock area.

The Spring Mountain Range, of which Red Rocks is a part, is isolated by intervening deserts. Isolation has resulted in speciation which has produced one endemic chipmunk (Eutamias palmeri), a few endemic subspecies of other mammals, and several endemic plant species (Bradley and Deacon 1965). These unique species present an excellent opportunity for interpretive programs.

There are several game species in the Red Rocks area, including desert bighorn sheep, elk, deer, rabbits, and quail. The area is considered an important desert bighorn sheep range. Bighorn are observed often in the Red Rocks area. The bighorn population in the Spring Mountain Range is from 75 to 100 head. Deer are present in the area but are much more abundant in the higher elevations of the Spring Mountains. Elk occasionally migrate into the area but in very small numbers. The valley area has good populations of Gambel's quail and cottontails wherever water is found.

Typical of most desert environments, the greatest wildlife activity is during the night hours. The greatest variety of wildlife species is present near permanent water supplies. Opportunities for observation of the desert wildlife are, consequently, greatest during the nighttime near water sources.

Some of the wildlife species which have special recreation values are listed below:

Amphibians and Reptiles

- Desert Toad
- Pacific Tree Frog
- Leopard Lizard
- Western Whiptail Lizard
- Gilbert's Skink
- Yucca Night Lizard

Mammals

- Bats - five species
- Cottontail Rabbit
- Panamint Chipmunk
- Antelope Ground Squirrel
- Rock Squirrel
- Mice - several species
- Kangaroo Rat
- Badger
- Desert Wood Rat
- Ring Tail Cat
- Coyote
- Bobcat
- Mountain Lion
- Mule Deer
- Desert Bighorn Sheep
- Elk

Birds

- Turkey Vulture
- Golden Eagle
- Gambel's Quail
- Mourning Dove
- Roadrunner
- Ruby Crowned Kinglet
- Long-eared Owl
- Ladderback Woodpecker
- Common Raven
- Western Bluebird
- Phainopepla
- Audubon's Warbler
- Bullock's Oriole
- Indigo Bunting
- Rufous-sided Towhee
- Oregon Junco

5. Cultural Features. Man has occupied the region for at least 10,000 years, and perhaps longer. Gypsum Cave, near Las Vegas, has provided evidence of a big game-hunting culture at about 9,000 B.C. Other hunting and gathering peoples, represented by Pinto Basin points, were in the region in pre-Christian times. Although these peoples have not been specifically identified in the Red Rock area there is good indication that they were there. A complete inventory of the area is needed.

At about the time of Christ a hunting-gathering type culture was prevalent in the region. These people were related to the general Basket Maker culture spread over much of the Southwest at this period. The culture received maize, beans, and squash in time and settled down to a sedentary way of life until they dispersed in the late 1100's. This group was centered on the lower Virgin and Muddy Rivers, living at first in pit houses and later in Pueblo style surface dwellings. Although basically farmers, these people also hunted game and gathered mescal (agave) far and wide. One of their use areas was the Red Rock area, as indicated by pottery, mescal pits, camp sites, and possibly pithouses.

Sometime after 700 A.D. the Southern Paiute entered the area. They were distantly related to the people carrying the Pueblo culture of the Virgin and Muddy River, as some aspects of their life-ways were quite similar. They also traded among themselves.

The Paiutes were a gathering people doing some hunting, and some groups practicing an insipid agriculture. They used some of the same mescal pits, camp sites, and areas as did the Pueblos. They also used windbreaks of brush and caves of semi-permanent dwellings, and during the winter gathered at specific village locations for social and religious rites. The Paiutes were in the area at contact and remain on reservations nearby today.

There are indications, through pottery mainly, of contacts in prehistoric times by both the Pueblos and the Paiutes with people to the south, peoples ancestral to the present-day Mohave, Yuma, Walapai, and others. In historic times we have accounts of Mohave raids into the area for plunder and slaves.

In historic times the Spanish, Mexicans, Mountain Men, and Mormon Pioneers all passed through the region via the trail over Spring Mountain Pass. They left little evidence of passing, however. Only the cattlemen settled in the valley below the escarpment and even they have passed from pioneer rancher to businessman types.

The archeological resources have been well inventoried in the northern end of the Red Rocks, especially Brownstone Canyon, Sandstone Quarry, Lost Creek, Willow Spring, Calico Spring, and Ice Box Canyon. We can expect sites wherever there is water in the rest of the unsurveyed area. Southern Nevada University is proceeding with a complete survey of the proposed recreation area.

6. Water Resources. This area is bisected by the Red Rock escarpment which divides the area into two main drainages. To the west the water drains into the Pahrump Valley, and to the east it drains into the Las Vegas Valley.

The Red Rock area is devoid of lakes, rivers, or large streams. Seasonal ponds or potholes occur in the high sandstone bluffs area. Springs and seeps occur throughout the area. See the table below.

Surface Water Within
Red Rock Canyon Recreation Lands

Name	G.P.M.	Date Measured	Apparent Ownership
Calico Spring	2	Oct.1965	Spring Mountain Ranch
Red Spring	3	Oct.1965	" " "
Ash Creek	10	12/13/65	" " "
White Rock Spring	1½	Oct.1965	" " "
Willow Spring	4	Oct.1965	" " "
Lost Creek Spring	10	Oct.1965	Public Water Reserve
La Madre Spring	?		Unknown
Switchback Spring	Dry	Oct.1965	Spring Mountain Ranch
Lonepine Spring	Dry	Oct.1965	" " "
Ice Box Canyon Spring	2	12/13/65	Unknown
Pine Creek	50	12/13/65	"
Oak Creek Spring	12	12/13/65	Spring Mountain Ranch
Mud Spring #1 and #2	3	Oct.1965	" " "

Other springs not measured: Sandstone Spring, Mormon Green Springs, Wheeler Camp Spring, Cottonwood Spring, Bootleg Spring, Rainbow Spring, Mountain Springs.

Preliminary studies by U. S. Geological Survey indicate that there is an adequate supply of underground water available to support recreation needs. A rather intensive testing program is needed to confirm the availability of underground water.

Except for Lost Creek Spring, all of the usable surface water appears to be appropriated. The legal ownership of the water is a problem not peculiar to Red Rocks but the same problem exists throughout the state: i.e. Does the water belong to the state or the Federal government? Has the apparent owner proved beneficial use, etc.? To complicate the matter, grazing privileges are established on a water base.

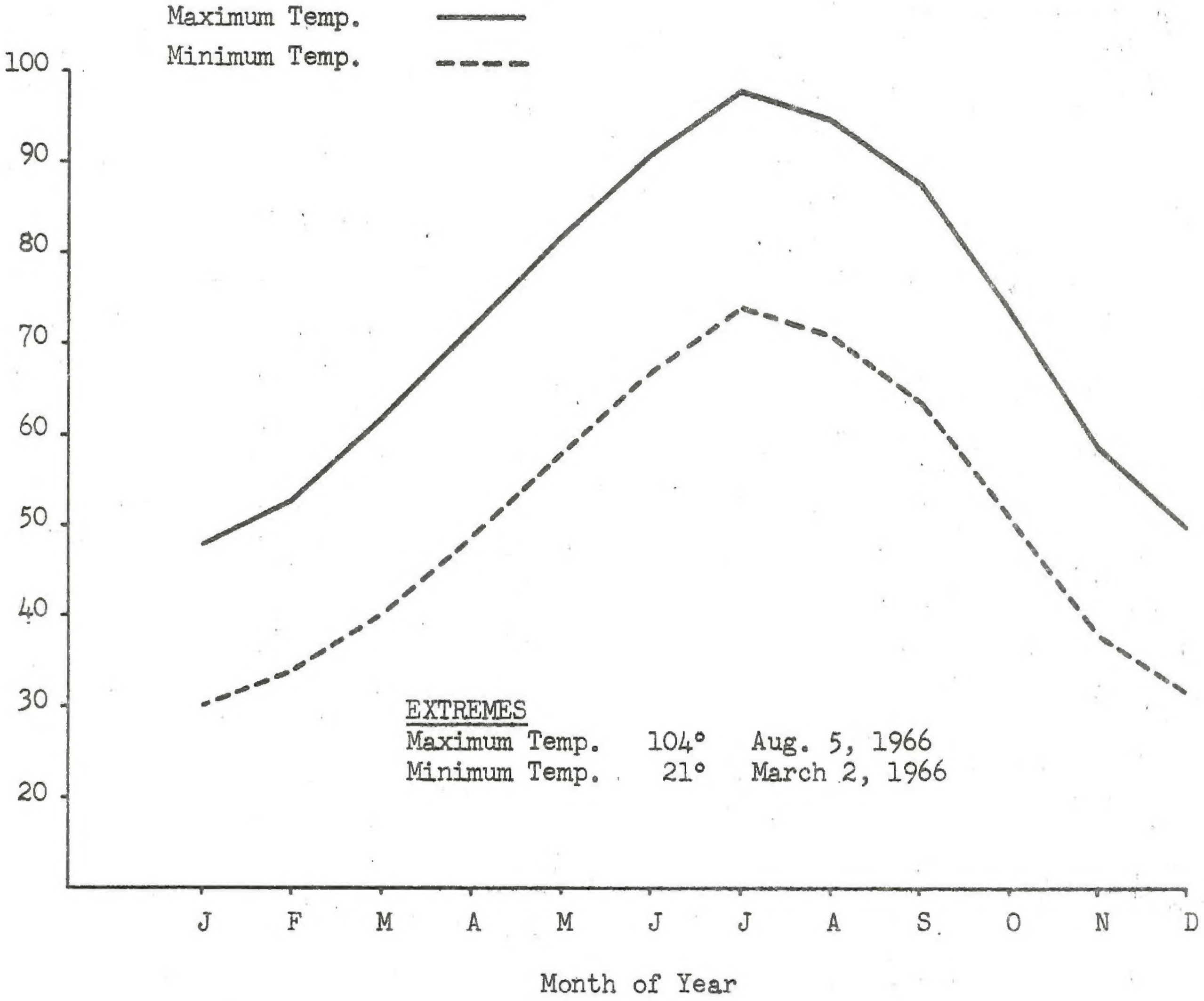
Even if legality of the surface water were not in question, there would be problems. The surface water forms the basis for a unique ecological community, including ferns that are found nowhere else in Nevada and ponderosa pine which grows at the low elevation of 4,000 feet in a hot, desert environment. If this water is siphoned off for recreation purposes, one of the very important recreation attractions will be gone. There is an urgent need to explore the underground water potential of the Red Rock area so that this source can be used for recreation purposes.

7. Soils. The soils within the area generally contain the characteristics typical of the southwest desert terrain: Low organic matter, low soil nutrients, high pH, shallow depth, and rapid permeability. These soils are not well developed as the A and B horizons associated with soils in other regions of the United States, and usually these horizons are barely recognizable. Caliche, or marl, occurs in the valleys limiting the soil depth from a few inches to a few feet. Generally, all soil found in these valleys has high concentrations of soluble salts or carbonates and bicarbonates of sodium. The only occurrence of soils being reclaimed for agriculture is at the Spring Mountain Ranch near Blue Diamond.

8. Climate. Climatic conditions for the lower elevations of the Red Rock area are measured at Calico Basin (Little Red Rock Canyon). The official U. S. Weather Bureau station was installed at that location in February 1965. Since three years is much too short a period to establish normals for the area, data from the weather station at McCarran Airport will be used as a basis for interpolation and in some cases a direct indication of Red Rock conditions.

An elevation differential of over 3,000' between Calico Basin and the higher elevations of the Red Rock area produces climatic conditions which appear to vary significantly from those measured at the weather station. However, most conditions are not officially measured at the higher location. Since the variations will have a profound effect on the attractiveness of Red Rocks, it will be necessary to substitute estimates for the missing data.

a. Temperature. In the lower Red Rock area, daily maximum temperatures average 73° for the year with daily minimum temperatures averaging 51° annually. Compared to Las Vegas temperatures, these figures are, respectively, 6° and 2° lower. As to the higher elevations, maximum temperatures are estimated at some 12° lower than the Calico Basin readings, with minimums approximately 4° lower. (Residents of Mountain Spring, which is on top of the escarpment, claim a 12° difference.) The day/night temperature difference for the year averages 22° at lower elevations.



EXTREMES

Maximum Temp.	104°	Aug. 5, 1966
Minimum Temp.	21°	March 2, 1966

b. Precipitation. Rainfall in the Las Vegas Valley averages 3.9 inches annually and occurs at a normal rate of less than 1/2 inch per month. The extremes of the normal range are a low of .04 inches in June and a high of .53 inches in January.

Snow rarely falls at lower elevations, and even on the rare occasions it usually melts as it falls or shortly thereafter. The one exception occurred in January 1949, when 16.7 inches fell during the month. The maximum snow depth at that time was 7 inches. Normal snowfall averages 1.1 inches in January, 0.3 inches in November, and only traces in October, December, and February-April. At the higher elevations, snowfalls are somewhat heavier and remain longer on the ground.

c. Wind. The prevailing direction of normal winds in the valley is from the southwest. The mean velocity is approximately 9 miles per hour, with the highest speeds occurring during May and June. Strong winds, which are usually associated with major storms, arrive either from the southwest or northwest. Speeds of over 50 m.p.h. are infrequent, the highest being a 54 m.p.h. reading in February 1965.

d. Special Conditions. There is a period of about two weeks almost every summer when thunderstorms prevail and abnormal amounts of rainfall occur. On occasion these storms have developed into cloudburst proportions and resulted in extremely dangerous flash-floods. Within the span of recorded data at Calico Basin, a maximum 24-hour total of 3.50 inches occurred in December 1966.

Social-Economic Profile

1. Transportation Systems. Five major highways converge at Las Vegas, the focal point of Clark County. One of these is Interstate 15, which will eventually provide continuous, 4-lane driving from Las Vegas to other major Western population centers such as Salt Lake City and Los Angeles. At present some 290 miles have been completed between southern California and southern Nevada. Additional modes of transportation are eight major airlines, several bus lines, and the Union Pacific Railroad.

Access to and within the Red Rock area is rather limited at present. Charleston Avenue and Blue Diamond Road converge at the east edge of the study area, providing a paved loop road for Las Vegas residents and direct access on and off the Interstate for non-local visitors. All remaining roads are unpaved, with the majority designated as "jeeps only."

2. Population Centers. Red Rock Canyon is located in the western half of Clark County, the largest populated area in Nevada and one of the fastest growing regions in the Nation. Evidence of a phenomenal growth in population is seen in recent census enumerations: (1) From 1940 to 1964, County population as a percentage of State population has increased from 15% to 60%. (2) A 165% population increase occurred during the decade following 1950. (3) Another decade of spectacular growth is indicated by a 100% population increase during the first four years of the 1960's.

According to estimates of Dr. G. N. Rostvold, Professor of Economics at Pomona College (Claremont, California), Clark County population was 255,000 in 1965. His projections are 350,000 by 1970 and 575,000 by 1980.

In 1963 approximately 69% of the County population was distributed in four urban centers: Las Vegas, North Las Vegas, Henderson, and Boulder City. Las Vegas is the largest of the communities and accounts for most of the Clark County growth. However, the other three have shown consistent increases since 1940.

There is little reason to believe that population will level off or decline in the next few decades. Immigration has accounted for 75% of the recent increases and as long as this type of growth is supported by an expanding employment base, Clark County will continue to grow.

3. Industry

The relative importance of various industrial activities in the Clark County economy is illustrated below.

Percentage Distribution of Employment by Industry

Industrial Group	1940	1964
Service	22.3	43.9
Retail, wholesale trade	20.0	17.7
Government	6.7	11.2
Construction	14.1	9.9
Transportation, communications, utilities	16.2	7.4
Manufacturing	3.0	5.0
Finance, insurance, real estate	1.5	4.3
Agriculture and mining	16.2	0.6
	100.0	100.0

Of special importance to future recreation development is the tremendous increase and the clearly predominant position of the service group. Tourist expenditures have been directly responsible for growth in the service activity; and from all indications, tourism will continue to support expansions in accommodations, food, gasoline, and related services.

A very necessary part of the accommodations are outdoor recreation sites. For example, approximately 12% of all out-of-state automobile tourists indicate scenic attractions and outdoor recreation as a primary trip purpose. Although it is a small percentage in comparison to the 30% seeking indoor recreation, it becomes a sizable figure when multiplied by the annual number of motorists (15 million in 1963). Considering the present and projected increases in disposable income, leisure time, and mobility throughout the Nation, it is fairly safe to assume that recreation resources in Nevada will absorb increasing non-local visitor pressures.

4. Recreation. There are three major recreation developments in Clark County, all of which may be viewed as alternative opportunities to the Red Rock area. The most extensively developed and used is Lake Mead National Recreation Area. Second in order of popularity is Mt. Charleston, an area developed and operated by the U. S. Forest Service. The third major area is Valley of Fire State Park.

Although there is obviously some overlap between the recreation opportunities already available and those to be provided at Red Rocks, each area has a unique and definite role in the overall recreation complex. Water activities, available at no other area under consideration, are the unique contributions of Lake Mead. Valley of Fire provides an unusual opportunity for viewing very colorful and delicately eroded sandstone formations. Mt. Charleston draws large summer crowds due, primarily, to high elevation and a coolness that is rare in southern Nevada.

Desert and high elevation areas within a relatively compact management area place Red Rocks in a position of offering yet another unique contribution to regional recreation opportunities. At present there are no developed areas with the same variety of recreational environments. Facilities at high elevation are some 20 - 30 miles northeast of the urban areas, and the developed desert areas are from 25 - 50 miles east and southeast. With improved access and additional development, Red Rocks will provide both desert and high elevation recreation facilities at shorter driving distances and, more important, at the same general destination. Variety is a very definite asset because there will be virtually no undesirable seasons at Red Rocks. In periods of extreme heat, visitors will not be restricted to the desert. If winter conditions isolate the high elevation facilities, visitors will still be able to use the lower developments.

5. Trends. The economy of Las Vegas and vicinity is in an early stage of growth and development. Using a land area holding capacity estimate of 3,000,000 persons and the present population as an index of the stage of growth, the economy of 1964 was at the 8% stage of development. Trends indicate that there is much growth ahead for this area.

Visitor Use

1. Existing Visitor Use Information

a. Number of visitors. Current visitor use estimates for the Red Rock Canyon area are based on State and County traffic counts and on data obtained from visitor interviews. Correction factors for non-recreation and double-counted vehicles, vehicle occupants, and seasonal traffic fluctuations were derived from the two data sources and applied to average daily traffic counts. The estimates of annual visitation are:

Annual average daily recreation vehicles	140
Total annual recreation vehicles	51,100
Total annual recreation visitors	192,000

Contrary to popular beliefs about desert recreation pursuits, vehicular traffic counts indicate that the heaviest visitation period occurs during the three summer months. The current predominance of pleasure driving, which is less affected by extreme heat than other outdoor recreation activities, and the normal summer increase in leisure time are further indications of the summer visitation increase in the Red Rock area.

The study of current visitation patterns also gives evidence of peak daily attendance on Sundays. An estimated 35% of the weekly total occurs on this day. In terms of design load, visitation on a typical Sunday in the prime use season amounted to some 1,550 individuals.

b. Origin of Visitors. Approximately 90% of the visitors to Red Rock Canyon in 1967 were residents of Clark County. The relatively low percentage of non-local visitors is attributed to deficiencies in access, facilities, and advertisement. Following the initial development phases, these percentages will more than likely fall into the present regional pattern of 70% local - 30% non-local.[1/]

c. Type of Visitors. Local family groups prevail among the visitors to the study area and there is a tendency for two or more families to travel in one vehicle. The degree to which this occurs appears to be abnormally high, probably due to a desire to save wear and tear on family autos. Organizational groups such as the Sierra Club and the Boy Scouts are frequent visitors to the roadless, back-country areas.

Modes of transportation range from the most frequently used sedan to jeeps, pick-up trucks, motorbikes, campers, and horses (in approximately that order of popularity).

[1/] See footnotes at end of section.

During the personal interviews on the Red Rock summit road, all vehicle drivers were asked to express their opinions concerning possible future recreational improvements (roads, trails, tables, etc.) in the area. The response to this question was overwhelmingly in favor of all types of improvements (approximately 70% in favor; 30% disapproved in one way or another).

d. Duration of Visits. Observations on length of stay were incorporated in the visitor interviews conducted near the Willow Springs Recreation Site. Although rather limited in scope, they do provide some insight to probable patterns at future developed sites.

Present visits average somewhat less than an hour but they vary anywhere from 5 minutes up to 5 hours or more. Pleasure drivers account for many extremely short visits, while picnickers may stop for as short as 20 minutes or as long as half a day. Other activities were so few in number that any length-of-stay calculations would be almost meaningless.

e. Purpose of Visit. The primary trip purposes, as expressed by vehicle drivers at the time of their entries, were:

Driving for pleasure - sightseeing	53%
Picnicking	24%
Other (hunting-shooting, hiking, camping,etc.)	23%

Participation in secondary activities was not determined.

2. Projected Visitor Use

a. Preliminary Assumptions. Prior to developing visitor use projections, three basic assumptions were made concerning factors that affect outdoor recreation demand and participation rates.

(1) All future facilities will be developed to meet the overall objectives of this recreation management plan. If the recreation resources are not developed to bring out the full potential of Red Rocks, projected visitor use figures that are based on optimum development premises will have little value.

(2) A concerted effort will be made to widely publicize the recreational attractions of Red Rock Canyon.

(3) There will be no immediate, drastic changes in present relationships between demand "shifters" (income, mobility, etc.) and outdoor recreation participation.

The reason for qualifying the projections at this time is simply to point out that unrealized expectations or altered socio-economic trends could easily invalidate the most carefully constructed procedures.

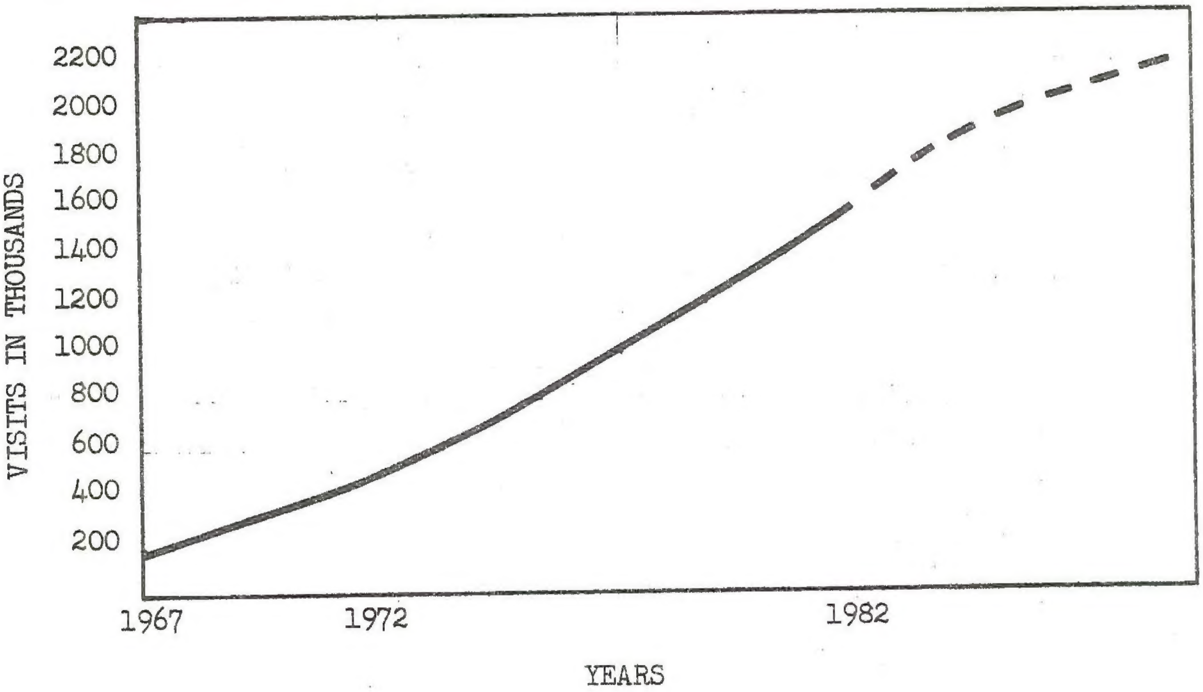
b. Factors Used in Projections. The most important factors affecting statewide demand for recreation facilities are population, leisure time, mobility, personal income, and tourism. With the exception of population, these demand shifters were analyzed for the state as a whole and then converted to regional trend "indicators." The following table lists the indicators that were developed for the Southern Desert and Mountain (SD&M) region.[2]

Socio-economic factors affecting outdoor recreation demand in Nevada

Factor	Indicator (1965-1970)	Indicator (1965-1980)
Population	1.56	2.35
Leisure time	1.03	1.10
Income	1.16	1.40
Mobility	1.08	1.34
Local attendance (P x LT x I x M)	2.01	4.84

Non-local attendance indicators were replaced in the present projections by assumptions which will be explained later.

c. Projected Annual Recreation Visitation. See the following chart.



The projection components in the "Nevada" technique are: (1) current annual visitor estimate; (2) present and projected local/non-local attendance percentages; and (3) the local attendance indicators. The application of these components is illustrated in the table below.

Application of Projection Components

	1967 %	1967 Visits	1967-1972 Indicator	1972 Visits	1967-1982 Indicator	1982 Visits
Local	90	172,800	2.01	347,300	4.84	836,400
Non-local	10	19,200	- [3]	148,800	- [4]	800,000
Total		192,000		496,100		1,636,400

d. Projected Facility Requirements. The first step in determining facility needs for projected visitation involves the computation of design loads. The formula[2] and symbol meanings in the computation are:

$$\frac{A \times B}{C} \times D = \text{Design Load}$$

where A = annual visitation
B = % visitation in prime use season (60% for SD&M region)
C = length of prime season in weeks (26% " " ")
D = % visitation on a typical summer Sunday in prime use season (50% for developed areas in SD&M region)

Application of the formula to the Red Rock visitation estimates resulted in design loads of 1,550 for 1967, 5,700 in 1972, and 18,900 in 1982.

Visitation on a typical summer Sunday in the prime use season (design load) is then converted to the probable distribution of recreation participation by potential activities (see the following table).

Anticipated Activity Participation Rates on a Typical Summer Sunday

Activity	Participation Percentages[6]	1967[7]	1972	1982[8]
(Design Load)		1,550	5,700	18,900
Sightseeing	64	--	3,600	12,100
Pleasure driving	59	--	3,360	11,200
Picnicking	58	--	3,300	11,000
Camping	21	--	1,200	4,000
Nature walks	16	--	900	3,000
Horseback riding	15	--	850	2,800
Hiking	10	--	570	1,900

The final step in the procedure involves a computation formula of the general form:

$$\frac{A \times B}{C} = \text{Facility Requirements}$$

where A = estimated number of activity participants on a typical summer Sunday

B = % peak hour activity participation is of total Sunday activity participation

C = persons accommodated by one unit.

The actual computations are illustrated in the two following tables.

Facility Requirements for Selected Activities During a Typical Peak Activity Hour in 1972

Activity	A	B	C	Facilities Needed
Picnicking	3,300	.25	4 persons per table	200 tables
Camping	1,200	.75	4 persons per unit	225 units
Nature walks	900	.25	50 persons per mile	4.5 miles
Horseback riding	850	.50	20 horses per mile	20.0 miles
Hiking	570	.75	40 persons per mile	10.0 miles

Facility Requirements for Selected Activities During a Typical Peak Activity Hour in 1982

Activity	A	B	C	Facilities Needed
Picnicking	11,000	.25	4 persons per table	700 tables
Camping	4,000	.75	4 persons per unit	750 units
Nature walks	3,000	.25	50 persons per mile	15 miles
Horseback riding	2,800	.50	20 horses per mile	70 miles
Hiking	1,900	.75	40 persons per mile	35 miles

FOOTNOTES

1/ Composite of origin data from Valley of Fire State Park, Toiyabe National Forest and Lake Mead N.R.A. (excluding Lake Mohave).

2/ Actual computations are illustrated in Recreation in Nevada, Part II. In very brief terms, each indicator represents a percentage increase for the four socio-economic factors within the designated time periods. Population is represented by estimates and projections for the region (not Clark County); mobility by miles per capita traveled for recreational and social use per year; income by personal per capita rates; and leisure time by average annual hours available for leisure.

3/ Assume present regional pattern - 70% local, 30% non-local.

4/ Assumption adopted from State plan - 50% local, 50% non-local.

5/ Recreation in Nevada, Part II.

6/ National participation rates converted to regional rates, ORRRC Study Report #19.

7/ Percentages inapplicable due to present opportunity deficiencies.

8/ Participation rates do not reflect possible future changes in percentages.

9/ Outdoor Recreation Space Standards.

Multiple Use Considerations

This section deals with the compatibility of recreation with other resource use. Problems or conflicts which exist or could exist are identified so that full consideration can be given during the preparation of the plan.

Refer to the Spring Mountain URA for detailed information on each specific activity.

1. Domestic Livestock Grazing. Livestock and the recreation user have been getting along well over the years, with one notable exception. One of the operators in the area has complained about livestock disappearing. It is not known whether the livestock were shot, hijacked, or wandered off. Under any circumstances, there has been a problem which needs close scrutiny in the development of future management plans.

There is a potential conflict between cows and people at the limited waterholes in the valley. Many of these waterholes are also choice recreation sites. Some accommodations will have to be made to distribute the water to alleviate this conflict. This won't settle the whole problem, however. Where there is water, there are trees--in this hot climate both cows and people need shade.

Technically, the wild burros which inhabit this area must be considered as domestic animals since the wildlifers refuse to accept them. These burros have recreation value for observation purposes and definitely should receive consideration when forage, water, cover, and other resources are allocated.

There is no reason why livestock and the recreation visitor cannot coexist together in the Red Rocks area, although there will undoubtedly have to be some changes in the carrying capacity, the season of use, and the distribution of livestock.

2. Fish and Wildlife Development and Utilization. The wildlife is considered an important recreation resource in the Red Rocks area. Fish species are nonexistent.

The same problems exist at waterholes as in the Livestock section; however, shade is not a serious problem. One additional problem exists, though, which needs careful consideration: that is the concentration of Gambel's quail around the valley water supplies. The development of recreation sites will infringe on their territory; and the hunters who come to harvest them in the fall will present a real hazard to the campers and picnickers who come in great droves in the fall.

There are some serious questions about effect increased recreation use will have on the desert bighorn sheep. This point needs to have further study.

3. Industrial Development. There is no industrial development in the area and none anticipated in the future.

4. Mineral Production. There has been no mineral production within the boundaries of the Red Rocks area. There has been some excavation for sandstone building blocks but the sandstone is so soft that this operation was terminated. There are several mining claims for building stone but it is very doubtful that any of them are valid.

There is a huge gypsum mine directly east of the area but this should have no effect on the recreation values within the Red Rocks area.

The only problem which should be considered is that the mining claims must be cleared before facility development can begin on any given site. Therefore, great care must be taken in coordinating mineral examinations with site development.

5. Occupancy. There is a small residential area which resulted from a Bureau small-tract sale in T. 21 X., R. 59 E., sec. 6. The presence of these improvements seriously detracts from the aesthetic values in Calico Basin. Additional occupancy would tend to detract from the aesthetic values that much more. There are permanent residences at the Spring Mountain Ranch, the Bonnie Spring Ranch, and the Oliver Ranch. Further expansion of residential development would seriously mar and downgrade the recreation values in the area.

6. Timber Production. The only forestry species in the area are pinyon-juniper and isolated patches of ponderosa pine. None of these species are present in quantity or quality worthy of management for timber production. The forestry types have much greater value for recreation purposes; therefore, no conflict or problem exists.

7. Watershed Protection. The Red Rock area is an important watershed which helps to recharge the underground water supply in the Las Vegas Valley and Pahrump Valley. The goals for improving the vegetative cover and reducing the intensity of flash floods is common between Recreation and Watershed Management. However, some conflicts may develop if watershed projects are proposed that would cause severe damage to the landscape, such as check dams and artificial revegetation projects. Careful study will have to be given this potential problem.

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Advisory Committees

Red Rocks Resource Committee
State Park Advisory Commission
BLM District Advisory Board

Coordination with Other Agencies

Lake Mead National Recreation Area, National Park Service
Las Vegas Ranger District, Toiyabe National Forest
Nevada State Parks Commission
Nevada Fish and Game Commission
Nevada Department of Highways
Southern Nevada Historical Society
Clark County Planning Commission
Clark County Engineering Department
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U.S. DEPARTMENT OF THE INTERIOR

March 3, 1849

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

LAS VEGAS DISTRICT — NEVADA
AUG., 1969
REPRINTED JUNE, 1970

APPENDIX II

BLM/Nevada State Park System Cooperative Agreements

BASIC AGREEMENT
BETWEEN
BUREAU OF LAND MANAGEMENT
UNITED STATES DEPARTMENT OF THE INTERIOR
AND
STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF STATE PARKS

THIS AGREEMENT is entered into this 30th day of June, 1969 by and between the Bureau of Land Management, United States Department of the Interior, hereinafter referred to as "The Bureau" and the State of Nevada, Department of Conservation and Natural Resources, Division of State Parks, hereinafter referred to as "The Division".

WHEREAS, the Bureau, under the Spring Mountain Classification #N-257, has segregated *approximately 78,000 acres of public domain and designated this area as the Red Rock Canyon Recreation Lands, and

WHEREAS, the Division, through its Statewide Comprehensive Outdoor Recreation Plan, has recognized this same area as a high priority for public park purposes to be developed by the Bureau, the Division and local agencies, and,

WHEREAS, a master plan has been developed for the area and there is an immediate need to acquire and develop areas within the Red Rock Canyon Recreation Lands in accord with the master plan in order to meet the increasing visitor demand, and

WHEREAS, both the Bureau and the Division are restricted by limitations of funds and manpower from individually implementing the master plan; but can better realize implementation of the master plan through well coordinated cooperative efforts, and

WHEREAS, the Bureau is authorized to enter into cooperative agreements to facilitate proper resource management under "The Taylor Grazing Act of June 28, 1934 as amended (43 U.S.C. Sec. 315a)" and "The Public Land Administration Act of July 14, 1960 (43 U.S.C. Sec. 1363)", and

WHEREAS, the Division is authorized to enter into cooperative agreements with the federal government under the Nevada Revised Statutes #407.067;

* This area is segregated from disposal under the agricultural land laws, the mining laws and public sale laws. The lands remain open to all other applicable forms of appropriation, including the mining and mineral leasing or material sale laws (including the Recreation and Public Purposes Act).

NOW THEREFORE, in consideration of the mutual promises and considerations herein made, it is agreed as follows:

I. Cooperation: The above named parties will cooperate fully and freely to provide maximum comfort and safety to the visiting public and to protect and enhance the natural resources of the areas within their respective responsibilities as delineated on the attached map (Exhibit #1) and in the following Parts II and III.

II. Primary State Responsibilities: In order to carry out the intent of this cooperative agreement, the following constitute those areas where the primary acquisition, development and administrative authority is to be exercised by the Division:

A. Description of the Area

The primary responsibility for administration by the Division approximates 19,500 acres in the aggregate, both public and private lands. This area includes approximately 19,200 contiguous acres in the north end of the Red Rock Canyon Recreation Lands.

The following is a description of the area:

T. 20 S., R. 58 E.
Secs. 8-17 inclusive
Secs. 20-29 inclusive
Sec. 32, NE¼NE¼
Sec. 35, N½, SE¼
Sec. 36, All

T. 21 S., R. 58 E.
Sec. 1, All north of proposed "Red Rock Scenic Drive, Segment A", exclusive of Lot 1.
Sec. 12, All north of proposed "Red Rock Scenic Drive, Segment A".

T. 20 S., R. 59 E.
Secs. 7, 18
Sec. 19, N½

T. 21 S., R. 59 E.
Sec. 6, Lot 7, S½SE¼SE¼NW¼, N½NW¼NE¼SW¼, S½S½NE¼SW¼, SE¼SW¼, N½NW¼SW¼SE¼, S½NE¼SW¼SE¼.

In addition, upon acquisition of private holdings in Pine Creek, Division responsibility will also include approximately 360 acres surrounding Pine Creek. The following is the description of the area:

> "T. 21 S., R. 58 E., Sec. 15, NW¼;
> Sec. 16, NE¼, SE¼NW¼"

The Division will be given land tenure to BLM administered land within its prime area of responsibility through leasing or sale under the Recreation and Public Purposes Act (43 U.S.C. 869) as provided in the Spring Mountain Classification. The public lands within the areas colored red on Exhibit #1 which the Division doesn't acquire by purchase or lease will be administered by the Division through cooperative agreement with BLM. In the event of the possibility of land exchange or trade, the State, the BLM and/or a third party would be free to negotiate providing the objectives of such an action would be in accord with the objectives of the master plan.

Acquisition of private holdings at Pine Creek, Ash Creek and La Madre Spring will be given first priority for action by the Division.

B. Acquisition and Development Plan of Action

The following areas are listed for acquisition and development but are not necessarily listed in priority for action:

Acquisition	Development
Pine Creek - 80 acres	Red Spring
Ash Creek - 160 acres	Ash Creek
La Madre Spring - 120 acres	Pine Creek
	Sandstone Quarry
	Brownstone Area
	La Madre Spring

C. State Administration and Operation and Maintenance

The Division shall plan to administer its areas of primary responsibility as a recreation area within the State Parks System and all appropriate rules and regulations pertaining to the public use of these areas will apply. However, until such time as the Division has the administrative and financial capabilities to operate and maintain their areas of responsibility, the Bureau will continue to administer the public lands described in Part II, A, of this agreement for both visitor and resource management and protection.

III. Primary BLM Responsibilities: Under the authorities for public land management, the Bureau of Land Management will have primary responsibilities for administration, development, operation and maintenance of the remaining portion of the Red Rock Recreation Lands with the exception of those areas delineated for joint administration as shown in Exhibit #1.

A. Description of Area

The Bureau's area of primary responsibility consists of approximately 58,500 acres.

The following is a description of the area:

T. 20 S., R. 57 E.
Secs. 24-25, 36

T. 21 S., R. 57 E.
Secs. 1, 12-13, 24-25, 36

T. 20 S., R. 58 E.
Secs. 18-19 inclusive
Secs. 30-31 inclusive
Sec. 32, S½, NW¼, S½NE¼, NW¼NE¼
Secs. 33-34 inclusive
Sec. 35, SW¼

T. 21 S., R. 58 E.
Sec. 1, All south of proposed "Red Rock Scenic Drive, Segment A".
Secs. 2-11 inclusive
Sec. 12, All south of proposed "Red Rock Scenic Drive, Segment A".
Secs. 13-14 inclusive
Sec. 15, S½, NE¼
Sec. 16, S½, W½NW¼, NE¼NW¼
Secs. 17-23 inclusive
Sec. 24, W½W½
Sec. 25, W½
Secs. 26-33 inclusive
Sec. 34, N½, SW¼, SW¼SE¼, N½SE¼
Sec. 35, N½, SE¼
Sec. 36, W½

T. 22 S., R. 58 E.
Sec. 1, Lots 1, 2, 3, 4, S½N½, N½SE¼, SE¼SE¼
Sec. 2, Lots 1, 2, 3, S½N½, N½SW¼, NW¼SE¼
Sec. 3, Lots 3, 4, SW¼NW¼, S½SW¼, SE¼

Secs. 4-11 inclusive
Sec. 12, Lots 1-6 inclusive, E½, SE¼SW¼
Secs. 13-18 inclusive
Sec. 20, NE¼
Secs. 21-28 inclusive
Secs. 33-36 inclusive

T. 21 S., R. 59 E.
Sec. 18, S½, S½N½, NW¼NW¼

IV. Joint Administrative Efforts: In order to prevent a duplication of services and to reduce costs to both agencies, the following items of joint concern will be resolved through mutual consent and cooperative agreements supplemental to the base agreement:

A. Administration

B. Operations

C. Maintenance

D. Utilities

E. Roads

F. Archeology Inventory and Salvage

G. User Fees

H. Planning - (Master Planning - Site Planning) (new and updating) to be mutually approved prior to implementation.

I. Protection - The visitor and resource protection throughout the entire area will be coordinated between the two agencies as well as other local agencies which may be involved by agreement.

J. Visitor Center

K. Blue Diamond Administrative Site

V. Coordination With the Master Plan: All developments and operations within the Red Rock Canyon Recreation Lands area will be consistent with the scope of the Red Rock Canyon Recreation Lands Master Plan. Revision of the plan will be on a continuing basis and will be subject to preparation, review and approval by both agencies.

VI. Responsibility for Supplemental Cooperative Agreements: All supplemental cooperative agreements between the State and the Bureau will be negotiated by the Nevada State Director, Bureau of Land Management and the Administrator, Nevada State Parks System, or their respective designees.

VII. Termination or Revision of Cooperative Agreements: Any revisions of the Basic Agreement or Supplemental Agreements will be made only by mutual agreement of both the Bureau and the Division.

Either party may terminate the Basic Agreement or any of the Supplemental Agreements upon written notice to the other. Said notice should state a certain time that the agreement shall terminate which shall be not less than six (6) months.

VIII. Annual Review of Agreements: There shall be an annual review of the Basic Agreement and Supplemental Agreements by both the Bureau and the Division. The date and location to be determined by mutual consent. Any additional meetings necessary in order to meet unforeseen circumstances affecting the protection or use of the Red Rock Canyon Recreation Lands may be called by the mutual consent of both the Bureau and the Division.

State of Nevada

By Eric R. Cronkhite

Administrator
Division of State Parks
Department of Conservation and
Natural Resources

Date: June 30, 1969

The United States of America

By

State Director, Nevada
Bureau of Land Management
United States Department of the Interior

Date: June 30, 1969

Approved as to form;
Harvey Dickerson, Attorney General By:

Deputy Attorney General

COOPERATIVE AGREEMENT
BETWEEN
BUREAU OF LAND MANAGEMENT
UNITED STATES DEPARTMENT OF THE INTERIOR
AND
STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF STATE PARKS

THIS AGREEMENT is entered into this 30th day of June, 1969 by and between the Bureau of Land Management, United States Department of the Interior, hereinafter referred to as "The Bureau" and the State of Nevada, Department of Conservation and Natural Resources, Division of State Parks, hereinafter referred to as "The Division".

WHEREAS, the Bureau and the Division have previously entered into a Basic Agreement dated June 30, 1969 on an executory basis, and

WHEREAS, said Basic Agreement, Part III, allows for the Bureau and Division to enter into cooperative agreements supplemental to the Basic Agreement for cooperative administration and development of certain areas of the Red Rock Canyon Recreation Lands.

WHEREAS, both agencies are vitally interested in developing a water supply within the Red Rock Canyon Recreation Lands which would serve facilities to be developed and administered by both the Bureau and the Division.

WHEREAS, the Bureau, in the course of its development of a water supply in the Red Rock Canyon Recreation Lands is planning to develop a water supply in areas designated in Part II of the Basic Agreement as areas of State responsibility; and in Part III of the Basic Agreement as areas of Bureau responsibility, and,

WHEREAS, the Division desires to provide financial assistance to the Bureau in execution of the water supply development within the Red Rock Canyon Recreation Lands,

NOW THEREFORE, in consideration of the mutual promises and considerations herein made, it is agreed as follows:

I. The Bureau agrees to:

A. Prepare and administer and fund the necessary contracts in order to carry out the water supply development work within the Red Rock Canyon Recreation Lands within Fiscal Year 1970.

B. Request initial water supply development work, to the extent funds are available, at:

Willow Spring - Pump Test
Ice Box Canyon - Well and Pump Test
7, Red Spring - Well and Pump Test
Visitor Center Area - Well and Pump Test
Pine Creek - Well and Pump Test

II. The Division agrees to:

A. Provide financial assistance to the Bureau for use in development of the RRCRL water supply, within the constraints of the State Budget.

B. Contribute to the Bureau for use in Fiscal Year 1970 the initial sum of $1,000 to be used in execution of the water supply development within the Red Rock Canyon Recreation Lands.

III. Both parties agree to:

A. Review and revise as necessary this cooperative agreement in order to provide for additional Division financial assistance to the Bureau in completion of the water supply development.

State of Nevada

By Eric R. Cronkhite
Administrator
Division of State Parks
Department of Conservation and
Natural Resources

Date: June 30, 1969

The United States of America

By Nolan Keil
State Director, Nevada
Bureau of Land Management
United States Department of the Interior

Date: June 30 1969

Approved as to form;
Harvey Dickerson, Attorney General By:

William Paul
Deputy Attorney General

INTERIM SUPPLEMENTAL AGREEMENT
between
BUREAU OF LAND MANAGEMENT
and
STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF STATE PARKS

THIS AGREEMENT is entered into on October 23, 1973 . 1973 by and between the Bureau of Land Management, United States Department of the Interior, hereinafter referred to as "The Bureau" and the State of Nevada, Department of Conservation and Natural Resources, Division of State Parks, hereinafter referred to as "The Division."

WHEREAS, the Bureau and the Division have previously entered into a Basic Agreement dated June 30, 1969 on an executory basis, and

WHEREAS, said Basic Agreement, Part III, allows for the Bureau and Division to enter into cooperative agreements supplemental to the Basic Agreement for cooperative administration and development of certain areas of the Red Rock Canyon Recreation Lands.

WHEREAS, the Bureau has personnel engaged in management and development of the Red Rock Canyon Recreation Lands, and

WHEREAS, the Division has funds and personnel as of July 1, 1973 available to participate in the management of the Red Rock Canyon Recreation Lands, and,

WHEREAS, there is a need for interim management coordination if both agencies are to operate within the area,

NOW THEREFORE, in consideration of the mutual promises and considerations herein made, it is agreed as follows:

I. Cooperation: The above named parties will cooperate fully and freely to provide maximum comfort and safety to the visiting public and to protect and enhance the natural resources of the areas within their respective responsibilities as delineated on the attached maps (Exhibit #1 and #2) and further, as provided in Parts II, III, and IV of this agreement.

II. Primary State Responsibilities: In order to carry out the intent of this cooperative agreement, the following constitute those areas where the primary acquisition, development and administrative authority is to be exercised by the Division:

A. Description of the Area

The area of primary responsibility for administration by the Division includes national resource lands at the north end of the Red Rock Canyon Recreation Lands.

The following is a description of the area: (Exhibit #2).

T. 20 S., R. 58 E.
Sections 8-17 inclusive
Sections 20-27 inclusive
Section 28, E½
Section 33, NE¼
Section 34, All north of and including "Red Rock Scenic Drive Road, Seg. A"
Section 35, All north of and including "Red Rock Scenic Drive Road, Seg. A"
Section 36, All

T. 21 S., R. 58 E.
Section 1, All northeast of and including "Red Rock Scenic Drive Road, Seg. A," exclusive of Lot 1 and Calico Vista.
Section 12, All east of and including "Red Rock Scenic Drive Road, Seg. A"

T. 20 S., R. 59 E.
Sections 7, 18
Section 19, N½

T. 21 S., R. 59 E.
Section 6, Lot 7, S½SE¼SE¼NW¼,
N½NW¼NE¼SE¼,
S½S½NE¼SW¼, SE¼SW¼,
N½NW¼SW¼SE¼,
S½NE¼SW¼SE¼.

B. State Administration, Operation and Maintenance

The Division shall plan to administer the recreation management in its area of primary responsibility as a unit of the State Park System. Recreation management is defined as visitor management, and safety protection, recreation resource protection and management, enforcement, and garbage-litter pickup. Until such time as the Division acquires land tenure on the lands described as its area of responsibility, the Bureau will continue to exercise its responsibilities in the resource management activities that involve lands, minerals, forestry, watershed, wildlife habitat, fire protection, and livestock grazing. The Division will not construct any permanent facilities on its area of responsibility until land tenure is secured and the final Environmental Impact Statement is approved by the Secretary of the Interior. All plans for permanent or temporary facilities or developments must be agreed to by the Bureau. Discussion as a result of the final Environmental Impact Statement will be accepted and incorporated by the State. Nothing in this agreement should be construed to establish recreation use fees. Recreation use fees must be established by mutual agreement.

III. Primary BLM Responsibilities: Under its authorities for the management of the national resource lands, the Bureau will have primary responsibilities for administration, operation and maintenance of the Red Rock Canyon Recreation Lands, with the exception of the recreation management responsibility described in Part II, A and B, which is the Division responsibility for recreation management.

IV. Management Assistance: Since the Bureau will be utilizing Red Rock Scenic Drive Road Segment A in administration of its area of primary responsibility it will assist the Division with visitor assistance and safety, litter pick-up and road maintenance along Segment A constructed road and parking area including cut and fill slopes. This area is estimated to be a zone 50 feet both sides and paralled to the center line of Segment A road. Assistance with road maintenance is agreed to be; the Bureau will handle actual work with its manpower, equipment and/or contracts; the Division will reimburse 50% of the cost of the road maintenance work over that length of Segment A road under its area of primary responsibility which is 6.7 miles out of a total of 7.2 miles.

V. Termination or Revision of Agreement: Any revisions of this Interim Supplemental Agreement will be made only by mutual agreement of both the Bureau and the Division. Either party may terminate this Supplemental Agreement upon written notice to the other. Notice of termination should state time of termination but shall not be less than 90 days unless mutually agreed to a lesser period by both parties.

State Of Nevada

By Eric Cronkhite
Administrator
Division of State Parks
Department of Conservation and
Natural Resources

Date: 10-23-73

The United States of America

By Edward F. Spang, Acting
State Director
Bureau of Land Management
United States Department of the
Interior

Date: October 15, 1973

Approved as to form;
~~Harvey Dickerson~~, Attorney General~~, By~~:
ROBERT LIST,

L. William Paul
Deputy Attorney General

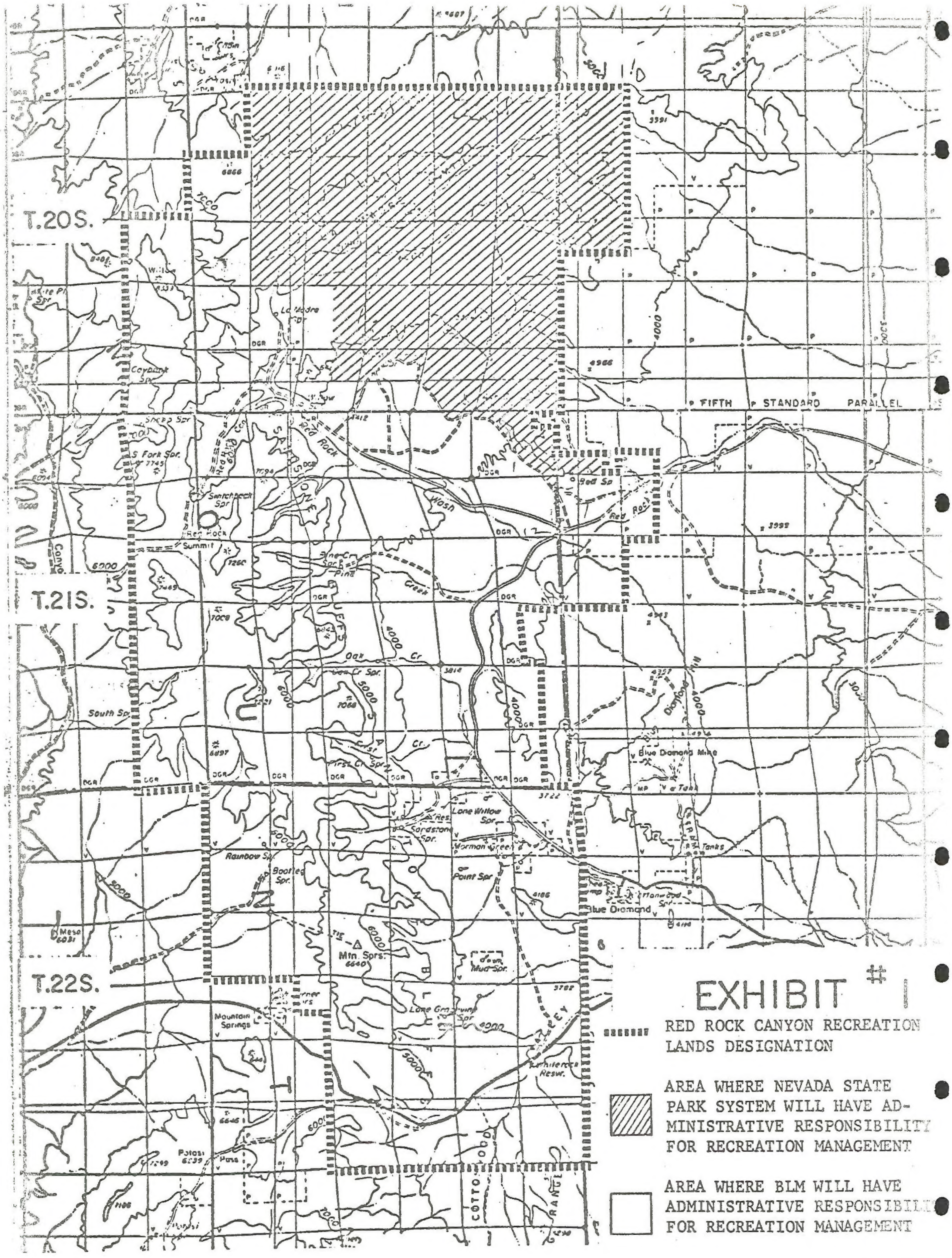


EXHIBIT # 1

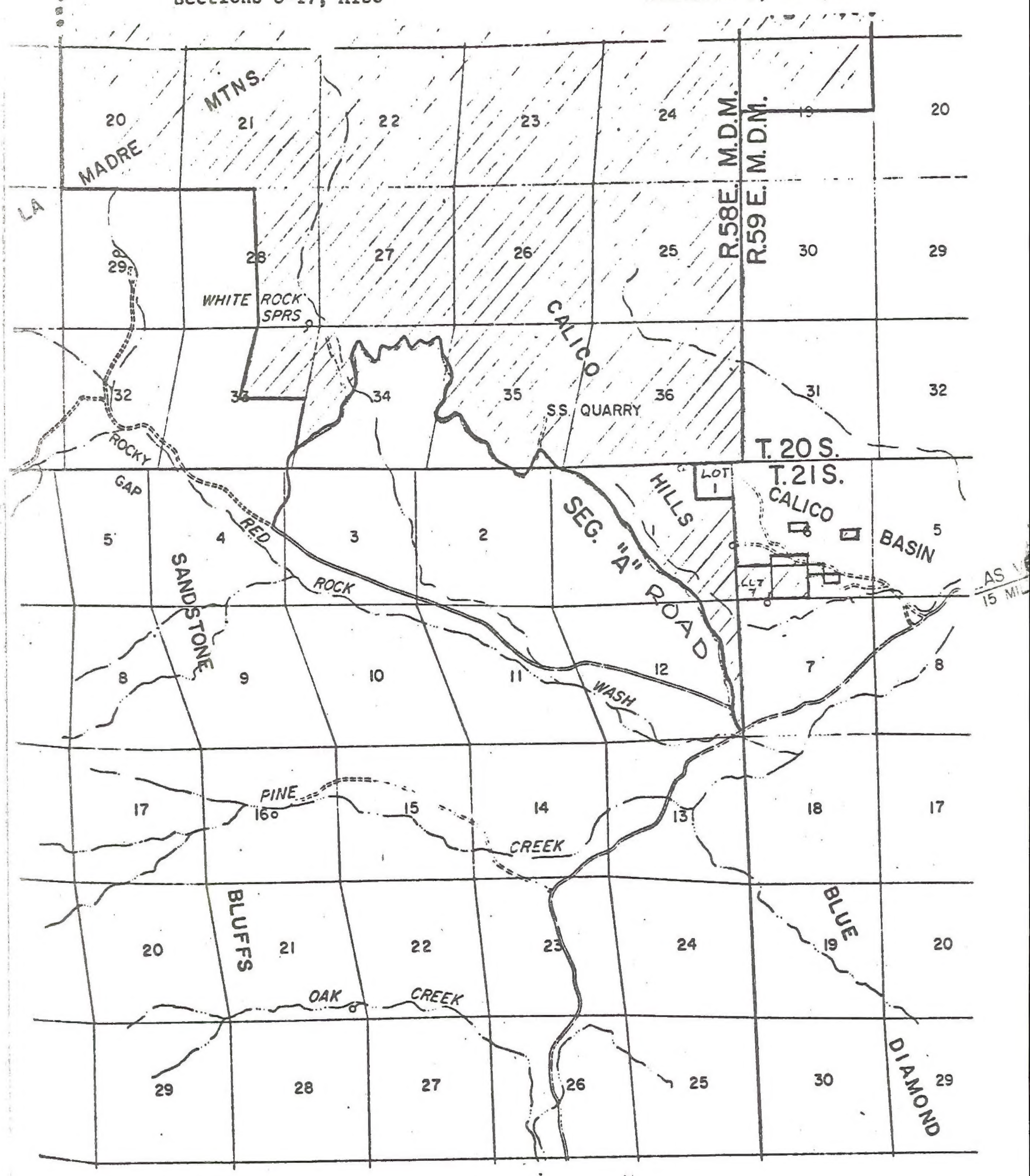
▮▮▮▮▮ RED ROCK CANYON RECREATION LANDS DESIGNATION

▨ AREA WHERE NEVADA STATE PARK SYSTEM WILL HAVE ADMINISTRATIVE RESPONSIBILITY FOR RECREATION MANAGEMENT

☐ AREA WHERE BLM WILL HAVE ADMINISTRATIVE RESPONSIBILITY FOR RECREATION MANAGEMENT

Sections 8-17, Also

Sections 7, 18 Also



▨ AREA WHERE NEVADA STATE PARK SYSTEM WILL HAVE ADMINISTRATIVE RESPONSIBILITY

N

1" = mile

EXHIBIT #2

APPENDIX III

Red Rock Faunal Lists and Descriptions

I. Mammals

Bats (Order Chiroptera)*

Long-eared bat - Myotis euotis

Common in thinly forested areas at high elevations.

California myotis - Myotis californicus

Very common. Lives in small colonies or singly in crevices of rocky outcrops or hollow trees.

Small-footed myotis - Myotis subulatus

May be found in rock crevices near pinyon/juniper woodlands.

Long-legged myotis - Myotis volans

Commonly found in crevices of rock ledges in pinyon/juniper regions. Lives in colonies.

Western pipistrelle - Pipistrellus hesperus

Very common inhabitat of caves and cliff crevices near water.

Big Brown bat - Eptesicus fuscus

Lives singly or in small groups in caves, hollow trees, rock crevices.

Red bat - Lasiurus borealis

Seen occasionally in creosote brush community. Solitary bats.

Hoary bat - Lasiurus cinereus

Also solitary. Lives in trees or occasionally in caves in creosote regions.

*all nocturnal, feed on insects.

Spotted bat - Euderma maculata

Threatened species. Little is known of the distribution or numbers of this species. Supposedly found throughout the southwest. Prefers to live in crevices of cliffs. Ranges from pins to creosote belts.

Western Big-eared bat - Plecotus townsendi

Found in caves in creosote, blackbrush and pinyon/juniper communities.

Big Freetail bat - Tadarida molassa

Colonies can be seen in cliff crevices or caves in creosote, blackbrush and pinyon/juniper communities.

Carnivores (Carnivora)

Ringtail - Bassariscus astutus

Uncommon dweller of creosote or desert riparian areas. Nocturnal. Feeds mainly on small mammals, insects, birds, fruits and invertebrates. Pairs live in caves or hollow trees. Important in keeping down rodent populations.

Badger - Taxidea taxus

Nocturnal furbearer, found in creosote, blackbrush, desert riparian and pinyon/juniper communities. Keeps rodent population in check. Lives in burrows.

Spotted skunk - Spilogale putorius

Uncommon. May be seen in creosote, blackbrush or pinyon/juniper regions. Nocturnal. Eats mice, birds, eggs, insects, carrion, some plants. Sprays scent only in self-defense. Dens in burrows.

Striped skunk - Mephitis mephitis

Easily recognized nocturnal mammals. Found occasionally in creosote brush community near water. Uses ground burrows. Eats mice, eggs, insects, berries and carrion.

Coyote - Canis latrans

Usually nocturnal. Very common in all communities. Its value to the ecosystem is highly controversial subject. Coyote will eat almost any animal or vegetable matter. Keeps rodent and rabbit populations in check, but will also attack domestic livestock and game birds. Seems to be very tolerant of humans.

Kit fox - Vulpes macrotis arsipus

Nocturnal hunter which preys on small mammals, birds, reptiles, amphibians and insects. Beneficial because it destroys rodents. Commonly seen in creosote, blackbrush and pinyon/juniper communities. Protected species.

Gray fox - Urocyon cinereoargenteus

Nocturnal, secretive furbearer which prefers the cover of pinyon/juniper woodlands. Climbs trees to escape danger. Sometimes found in ground burros in creosote or blackbrush areas. Eats small mammals, fruits, seeds, reptiles and insects.

Mountain lion - Felis concolor

Valuable game trophy animal. Individual animal may occasionally wander into the Red Rock area in search of its favorite prey - mule deer. (A mountain lion was shot at Mountain Springs in 1973.) But generally lions prefer rugged mountain terrain at higher elevations. Lions will take rabbits, birds and rodents as well as deer. Very elusive, chiefly nocturnal.

Bobcat - Lynx rufus

Common inhabitant of desert riparian and pinyon/juniper areas. Chiefly nocturnal furbearer which eats small mammals, birds and occasionally carrion. Dens in hollow logs and rock crevices or caves.

Rodents (Rodentia)

Rock squirrel - Citellus variegatus

Common diurnal inhabitant of pinyon/juniper woodlands. Lives on the ground, finding refuge beneath rocks. Eats seeds, fruits, nuts, eggs.

Roundtail ground squirrel - Citellus tereticandus

Common at lower elevations among creosote bush and cactus. Rests in shade of plants or in burros during hottest period of the day. Eats seeds or insects.

Whitetail antelope squirrel - Ammospermophilus leucurus

Widespread from creosote bush to pinyon habitats. Feeds on seeds, insects and meat. Does not require free drinking water.

Panamint chipmunk - Eutamias panamintinus

Prefers pinyon/juniper woodlands. Eats variety of vegetal material as well as insects.

Palmer (Charleston Mountain) chipmunk - Eutamias palmeri

Found only at the highest elevations. Endemic to Spring Mts. and Sheep Range of Clark County. Diet same as the Panamint chipmunk's.

Pocket Gophers (Geomyidae)

Valley (Botta) pocket gopher -Thomomys bottae

Burrower active day and night in rocky areas. Generally feeds on roots and tubers. Their digging helps aerate the soil.

Pocket Mice, Kangaroo Rats (Heteromyidae)

Little pocket mouse - Perognathus longimembris

Very commonly seen among sagebrush, creosote and cactus plants. Nocturnal. Nests in burrows. Stores seeds, does not need drinking water.

Great Basin pocket mouse - Perognathus parvus

Dens under bushes in sagebrush or pinyon areas. Food and water needs - same as above.

Desert pocket mouse - Perognathus penicillatus

Prefers open areas with sparse vegetation. Food and water - same as above.

Longtail pocket mouse - Perognathus formosus

Abundant on rocky slopes in creosote and blackbrush country. Food and water - same as above.

Great Basin kangaroo rat - Dipodomys microps

Prefers sparsely vegetated sandy or gravelly soil or rocky slopes. Eats green vegetation as well as seeds. Needs no free water.

Desert kangaroo rat - Dipodomys deserti

Common in creosote bush community. Food and water - same as above.

Merrimam kangaroo rat - Dipodomys merriami

Very abundant in creosote and blackbrush communities, sometimes seen in pinyon/juniper woodlands. Diet - same as above.

Mice, Rats (Cricetidae)

Western harvest mouse - Reithrodontomys megalotis

Cactus mouse - Peromyscus eremicus

Canyon mouse - Peromyscus crinitus

Deer mouse - Peromyscus maniculatus

Brush mouse - Peromyscus boylei

Pinyon mouse - Peromyscus truei

Mice commonly found in creosote, blackbrush, pinyon/juniper and desert riparian areas. Most live in burrows or among rocks. Feed on vegetation, seeds, nuts, insects.

Desert woodrat - Neotoma lepida

Common in creosote, blackbrush and pinyon/juniper. Eats seeds, fruits, nuts, cactus. Builds houses of debris on ground or among rocks.

Porcupine (Erethizontidae)

Porcupine - Erethizon dorsatum

Uncommon in pinyon/juniper woodlands. Dens in trees or caves. Eats buds, twigs, bark.

Hares and Rabbits (Lagomorpha)

Blacktail jackrabbit - Lepus californicus

Commonly seen near roads. Present throughout Red Rock area. Consumes large amount of forage valuable to other forms of wildlife.

Desert (Audubon) cottontail - *Sylvilagus auduboni*

Abundant in lower elevations - creosote and blackbrush areas, uncommon among pinyon/juniper woodlands. Important small game species.

Mountain (Nuttall) cottontail - *Sylvilagus nuttalli*

Another important small game species. Uncommon, found among thickets, loose rocks in pinyon/juniper woodlands. More common in higher elevations of Spring Mountains.

Even-toed Hoofed Mammals (Artiodactyla)

Mule deer - *Odocoileus hemionus*

Small numbers of this important game animal live in yearlong habitat along the north edge of the Red Rock area. More deer move down from the Spring Mountains into the LaMadre Spring - Red Rock Canyon during the winter. Usually active inmorning and evenings. Feeds on shrubs and trees. Water primarily at LaMadre, Unnamed and Lower Switchback Springs.

Bighorn sheep - *Ovis canadensis nevadensis*

Very valuable trophy game animal and the State Animal of Nevada. Prefers rugged terrain with sparse growth of trees. About 25,000 acres of important bighorn habitat exists along the southern exposure of LaMadre and along the Red Rock escarpment. Another 40,000 acres of marginal habitat (used occasionally by bighorn) occurs in the Red Rock Canyon Recreation Lands. Bighorn are very dependent on perennial forage which is in best condition along the south slope of LaMadre.

After periodic storms, sheep utilize water that has collected in natural basins especially in sandstone formations. During dry periods, they are dependent on permanent water sources. Lone Grapevine and Sandstones Springs, Unnamed and Sandstone Reservoirs and three big game guzzlers supply bighorn with water.

If good cover is sufficient (plenty of steep, rocky outcrops), bighorn will be tolerant of human activity. Such is the case around Willow Spring campgrounds. But in general bighorn are intolerant of human encroachment into important habitat in the Red Rocks. They are very susceptible during winter and spring when they use alluvial fans and foothills (these areas are used for lambing grounds in the spring). During dry summer months, when they seldom roam more than one or two miles from a permanent water source, they are usually intolerant of heavy human activities within 1/4-mile of these sources.

Elk - Cervus canadensis

Popular big game animal introduced into the Spring Mountain Range in the 1930's. Feeds on grasses, forbs, twigs and bark. Small numbers may wander down into northern regions of Red Rocks area during the winter, but are more commonly found in the higher elevations of the Spring Mountains (west of the Recreation Area).

II. Birds

Turkey vulture - Cathartes aura

Fairly common summer resident in creosote, saltbrush, blackbrush, desert riparian and pinyon/juniper communities. Nests in logs, rocks, cliffs. Eats carrion. Protected.

Sharp-shinned hawk - Accipifer striatus

Prefers pine forests, thickets. Nest in conifer trees. Eats rats, mice, rabbits, reptiles. Protected.

Cooper's hawk - Accipiter cooperii

Uncommon hawk in woodlands, canyons. Eats rats, mice, rabbits and reptiles. Protected.

Red-tailed hawk - Buteo jamaicensis

Common winter resident in creosote bush, blackbrush and desert riparian habitat, permanent resident of pinyon/juniper areas. Nests in isolated low trees. Eats rodents, rabbits and reptiles. Protected.

Golden eagle - Aquila chrysaetos

Permanent resident of higher elevations. Most eyries are in cliffs, some tree nests. Rodents and rabbits make up most of the diet. Species is very vulnerable to human interference. Protected.

American kestrel (Sparrow hawk) - Falco sparverius

Common winter resident in creosote, blackbrush and desert riparian habitat. Eats birds and rodents. Protected.

Prairie falcon - Falco mexicanus

"Threatened" species. Present in creosote bush habitat during winter. In March, moves to higher, eyrie sites to nests. Prefers cliff with sheltered ledges and loose gravel for nest sites. Sometimes nests in caves. Hunts doves, owls, jays, blackbirds, wrens, ground squirrels, sparrows, quail, lizards, insects and rabbits in open, treeless areas. Is tolerant of human activity as long as there's no loss of habitat, prey species or direct molestation.

Gambel's quail - Lophortyx gambelii

Important game species found in creosote brush, desert riparian and pinyon/juniper communities. Nests on the ground. Eats insects, seeds, buds, berries.

Band-tailed pigeon - Columba fasciata

Uncommon. Eats seeds, fruits, insects.

Mourning dove - Zenaidura macroura

Important game species. Common summer resident of desert riparian areas. Nest in trees, shrubs, cacti or on ground. Eats seeds, fruits, insects. Forbs are an essential food source.

Screech owl - Otus asio

Uncommon permanent resident of juniper-pinyon regions. Nests in tree cavities. Feeds on rodents, birds, reptiles and large insects. Protected.

Great horned owl - Bubo virginianus

Uncommon permanent resident nesting in trees, potholes and cliffs in desert riparian, pinyon/juniper and fir/pine communities. Consumes rodents, birds, reptiles and insects. Protected.

Long-eared owl - Asio otus

Uncommon permanent resident in pinyon/juniper and desert riparian habitats. Uses old hawk nests. Eats rodents, birds, reptiles and insects. Protected.

Poor-will - Phalaenoptilus nuttali

Common summer resident of creosote and blackbrush areas. Nocturnal eater of insects.

Common nighthawk - Chordeiles minor

Fairly common summer resident in creosote bush, blackbrush, saltbush, pinyon and desert riparian communities. Nocturnal hunter of insects. Protected.

Lesser nighthawk - Chordeiles acutipennis

Another common summer resident of creosote bush, blackbrush, and desert riparian habitats. Also nocturnal, eats insects. Protected.

White-throated swift - Aeronautes saxatalis

Commonly found in blackbrush, desert riparian and pinyon/juniper areas. Hunts flying insects. Lives in crevices of cliffs.

Black-chinned hummingbird - Archilochus alexandri

Uncommon. Nests in trees or shrubs near water. Consumes flower nectar, aphids and spiders.

Costa's hummingbird - Calyptc costae

Uncommon summer resident of riparian habitats. Eats nectar, insects.

Broad-tailed hummingbird - Selasphorus platycercus

Common in pinyon/juniper areas during the summer. Prefers nectar and insects for food.

Northern (Gilded) flicker - Colaptes chrysoides

Lives in cottonwood, yucca. Eats insects, seeds, fruits.

Red-shafted flicker - Colaptes cafer

Inhabits high elevations in the summer, moves into desert riparian areas in the winter. Fairly common. Nests in trees. Eats tree-boring insects, ants, berries, acorns, sap.

Yellow-bellied sapsucker - Sphyriapicus varius

Has been seen in pinyon/juniper areas. Nests in holes in trees. Eats insects, seeds, fruits.

Hairy woodpecker - Dendrocopas villosus

Fairly common in higher elevations during the winter. Same nesting and food habits as sapsucker.

Ladder-backed woodpecker - Dendrocopas scalaris

Fairly common permanent resident in blackbrush community. Nests in yucca. Feeds on insects. Fruits.

Western kingbird - Tyrannus verticalis

Cassin's kingbird - Tyrannus vociferans

Wied's Crested flycatcher - Myiarchus tyrannulus

Casual visitors to the area. Prefer semi-open areas with scattered trees. Prey on flying insects.

Ash-throated flycatcher - Myriarchus cinerascens

Fairly common summer resident of blackbrush, desert riparian and pinyon/juniper communities. Nests in hole in tree, mesquite or yucca.

Say's phoebe - Sayornis saya

Common permanent resident in desert riparian areas. In winter, birds move into creosote and blackbrush regions. Nests on rock ledges. Eat flying insects.

Traill's flycatcher - Empidonax trailli

Nests in shrubs. Eats flying insects.

Hammond's flycatcher - Empidonax hammondii

Occasional visitor to pinyon areas. Nests in limbs (15-50 feet above the ground). Preys on flying insects.

Dusky flycatcher - Empidonax oberholseri

Uncommon summer resident. Nests in shrubs or tree limbs not over 20 feet above ground. Eats flying insects.

Vermillion flycatcher - Pyrocephalus rubinus

Uncommon permanent resident of desert riparian areas. Nests in mesquites, willows, cottonwoods near water. Catches flying insects.

Gray flycatcher - Epidonax wrightii

Found nesting in sagebrush or pinyon/juniper trees. Flying insects are its primary food.

Western flycatcher - Epidonax difficilis

Seen during spring and fall migrations in pinyon/juniper areas. Consumes flying insects.

Western wood pewee - Contopus sordidulus

Prefers high elevation woodlands during the summer. Feeds on flying insects.

Olive-sided flycatcher - Nuttali ornis burealis

Summer resident of higher elevation woodlands. Catches flying insects.

Horned lark - Eremophila alpestris

Fairly common permanent resident of creosote bush community. Nests on the ground. Eats seeds and insects.

Violet-green swallow - Tachycineta thalassina

Tree swallow - Iridoprocne bicolor

Cliff swallow - Petrochelidon pyrrhonota

Rough-winged swallow - Stelgidopteryx rufficollis

Commonly seen in higher elevations or near water. Nests in holes of tree or in cliffs. All four species eat flying insects.

Scrub jay - Aphelocoma coerulescens

Common summer resident in pinyon/juniper community. Nests in bush or low tree. Omnivorous (eats both plant and animal matter).

Pinyon jay - Gymnorhinus cyanocephala

Usually nest in colony in pinyon, juniper or scrub oak trees. Omnivorous.

Clark's nutcracker - Nucifraga columbiana

Fairly common in higher elevation woodlands where it nests in conifers. Omnivorous.

Raven - Corvus corax

Common permanent resident of creosote bush, blackbrush and desert riparian areas. Omnivorous.

Crow - Corvus brachyrhynchos

Widespread. Nests in trees. Omnivorous.

Plain titmouse - Parus inornatus

Uncommon permanent resident of pinyon/juniper community. Nests in holes in trees. Eats nuts, insects, seeds.

Bushtit - Psaltriparus minimus

Common permanent resident of pinyon/juniper areas. Also visits creosote bush, blackbrush and desert riparian regions. Nests in bush or tree. Eats insects, nuts and seeds.

House wren - Troglodytes aedon

Bewick's wren - Thryomanes bewickii

Commonly seen in desert riparian or pinyon/juniper areas. Nests built in holes of trees. Insects and spiders form the bulk of their diets.

Cactus wren - Campylorhynchus brunneicapillum

Rock wren - Salpinctes obsoletus

Fairly common permanent residents in creosote bush, blackbrush and desert riparian areas. Both eat insects and spiders. Cactus wren nests in cactus or yucca, Rock wren in rock crevices.

Canyon wren - Catherpes mexicanus

Fairly common in creosote bush and blackbrush areas during the winter, permanent resident of desert riparian habitat. Also eats spiders and insects.

Mockingbird - Mimus polyglottos

Common permanent resident of desert riparian areas. Nests in bush or dense tree. Eats insects and fruits.

Bendire's thrasher - Toxostoma bendirei

Uncommon summer resident of pinyon/juniper. Nests in thorny bushes. Food is same as mockingbird's.

Curve-billed thrasher - Toxostoma curviostre

Nests in cactus or thorny bushes. Food is the same.

LeConte's thrasher - Toxostoma lecontei

Fairly common permanent resident of creosote bush, saltbrush and desert riparian habitats. Food same as above.

Crissal thrasher - Toxostoma dorsale

Uncommon bird found near water. Nests in bushes of mesquite. Food same as above.

Safe thrasher - Oreoscoptes montanus

Uncommon permanent resident of pinyon/juniper areas. Also found in creosote bush and blackbrush areas in the winter. Nests in low bushes.

Robin - Turdus migratorius

Winters in desert riparian areas. Nests in trees. Feeds on insects, worms, snails, berries.

Mountain bluebird - Sialia currucoides

Fairly common winter resident in creosote bush, blackbrush and desert riparian regions. Nests in tree or rocky areas. Diet same as robin's.

Western bluebird - Siala mexicana

Common winter resident in creosote and blackbrush areas, permanent resident of pinyon/juniper woodland. Nests in trees. Diet same as robin's.

Townsend's solitaire - Myadestes townsendii

Has been sighted in blackbrush and pinyon/juniper country. Nests on ground, in cliffs or rocks. Diet same as robin's.

Blue-gray gnatcatcher - Polioptila caerulea

Uncommon permanent resident of pinyon/juniper and desert riparian communities. Nests in trees. Feeds on insects, insect eggs and larvae.

Ruby-crowned kinglet - Regulus calendula

Fairly common migrant through pinyon/juniper areas. Food is same as gnatcatcher's.

Phainopepla - _Phainopepla nitens_

Commonly seen in the winter near water. Eats insects, berries. Nests in scrub or mesquite.

Loggerhead shrike - _Lanius ludovicianus_

Common permanent resident in desert riparian areas. Nests in bushes or trees. Consumes insects, lizards, mice, small birds.

Gray vireo - _Vireo vicinior_

Solitary vireo - _Vireo solitarius_

Warbling vireo - _Vireo gilvus_

Fairly common around riparian or pinyon/juniper areas. Nests in bushes or low branches of trees. All eat insects.

McGillvray's warbler - _Oporornis tolmiei_

Wilson's warbler - _Wilsonia pusilla_

Orange-crowned warbler - _Vermivora celata_

Nashville warbler - _Vermivora ruficapilla_

Yellow warbler - _Dendroica petechia_

Black-throated Gray warbler - _Dendroica nigrescens_

Yellow-rumped (Audubon's) warbler - _Dendroica auduboni_

Grace's warbler - _Dendroica graciae_

Townsend's warbler - _Dendroica townsendii_

All these songbirds feed on insects. The first six species nest on the ground, in shrubs or in low tree branches. The last three prefer to nest in conifer trees. Most are seen primarily during summer months.

House sparrow - _Passer domesticus_

Abundant species which nests in trees. Eats insects and seeds.

Western meadowlark - Dolichonyx oryzivorus

Commonly winters near springs. Nests in grass. Eats insects and seeds.

Hooded oriole - Icterus cucullatus

Nests under yucca trees. Diet same as meadow lark's.

Bullock's oriole - Icterus bullockii

Common summer resident in areas near springs. Diet same as above.

Scott's oriole - Icterus parisorum

Breeds in yucca and pinyon trees in creosote bush, pinyon/juniper riparian habitat. Diet same as above.

Brown-headed cowbird - Molothrus ater

Fairly common permanent resident of areas near springs. Diet same as above.

Western tanager - Piranga ludoviciana

Common summer resident of high elevations. Nests in pine or oak trees. Eats insects and small fruits.

Hepatic tanager - Piranga flava

Has been reported in pinyon/juniper and desert riparian habitats. Nests in trees. Feeds on insects, small fruits.

Evening grosbeak - Hesperiphona vespertina

Pine siskin - spinus pinus

Common summer residents of higher elevations. Nests in conifers. Feed on insects, seeds, small fruits.

All of the following songbirds feed on insects, seeds and small fruits. Most nest on the ground or in low bushes:

Black grosbeak - Guiraea caerulea

Indigo bunting - Passerina cyanea

Lazuli bunting - Passerina amoena

House finch - Carpodacus mexicanus

American goldfinch - *Spinus tristis*

Lesser goldfinch - *Spinus psaltria*

Lawrence's goldfinch - *Spinus lawrencei*

Green-tailed towhee - *Chlorura chlorura*

Rufous-sides towhee - *Pipilo erythrophthalmus*

Lark sparrow - *Chondestes grammacus*

Black-throated sparrow - *Amphispiza bilineata*

Sage sparrow - *Amphispiza belli*

Dark-eyed Slate-colored junco - *Junco hyemalis*

Oregon junco - *Junco oreganus*

Chipping sparrow - *Spizella passerina*

Breweer's sparrow - *Spizella breweri*

Black-chinned sparrow - *Spizella atropularis*

White-Crowned sparrow - *Zonotrichia leucophrys*

Song sparrow - *Melospiza melodia*

Other rare sightings in Red Rock are:

Cardinal - *Richmondena cardinalis*

sighted February, 1962.

Summer tanager - *Piranga rubra*

sighted 1966 Pine Creek.

Indigo bunting

sighted 1966, Pine Creek.

III. Amphibians and Reptiles

Amphibians

Pacific treefrog - Hyla regilla

Ground dweller found among low plant growth near water. Breeds in roadside ditches, reservoirs and springs. Eats insects, spiders.

Red Spotted toad - Bufo punctatus

Normally nocturnal toad (diurnal during breeding season) found in rocky canyons where it seeks shelter in rock crevices. Breeds in springs, reservoirs and temporary pools of water. Eats insects, spiders.

Reptiles

Lizards:

Banded gecko - Coleonyx variegatus

Uncommon nocturnal animal found in creosote bush and pinyon/juniper communities. Takes shelter in rock crevices and under fall vegetation near springs. Eats insects and spiders.

Desert Night lizard - Xantosia vigilis

Commonly found beneath fallen branches of Joshua trees, and dead clumps of yucca in creosote and blackbrush communities. Feeds on spiders and insects.

Chuckwalla - Sauromalus obesus

Large, rock dwelling lizard found in creosote bush community. It is herbivorous with the creosote bush as its staple food.

Desert iguana - Dipsosaurus dorsalis

Found in creosote and desert riparian communities. Eats leaves, buds, and flowers, insects and carrion.

Zebra-tailed lizard - Callisaurus draconoides

Found in washes and open areas of blackbrush, creosote and desert riparian communities. Needs room for running - its primary means of escape. Eats insects, spiders, other lizards and plants.

Collared lizard - Crotaphytus collaris

Common in canyons and rocky gullies of blackbrush and riparian communities. Feeds on insects and other lizards.

Leopard lizard - Crotaphytus wislizenii

Found in open areas of creosote bush community (space needed for running). Eats lizards, insects, small mammals, and plant blossoms and seeds.

Desert Spiny lizard - Sceloporus magister

Prefers Joshua tree, creosote bush, juniper and mesquite areas. Feeds on insects, lizards, buds and leaves.

Side-blotched lizard - Uta stansburiana

Very common in creosote, blackbush and desert riparian communities. Eats insects, scorpions, spiders, mites and ticks.

Long-tailed Brush lizard - Urosaurus graciosus

Found in loose sand, among scattered bushes in creosote community. Feeds on insects, spiders and plants.

Tree lizard - Urosaurus ornatus

Climbing lizard which frequents mesquite, oak, pine and juniper trees. Eats spiders and insects.

Desert Horned lizard - Phrynosoma platyrhinos

Prefers sandy areas in creosote bush communities. Eats ants and other insects.

Western whiptail - Cnemidophorus tigris

Very common in open areas of creosote, blackbush and desert riparian communities. Preys on insects, spiders, and scorpions.

Gila monster - Heloderma suspectum

Classified "rare" by the State of Nevada. At least one specimen has been taken from Red Rock area (Bradley and Deacon, 1966). Species prefers rocky or sandy washes in creosote bush community. Usually appears at dusk or after dark. Eats small mammals, birds' eggs, and other reptiles. Only venomous lizard in the U. S. Not dangerous unless molested. Many are killed deliberately by fearful recreationists.

Snakes:

Western Blind snake - Leptotyphlops humilis

Uncommon snake found in rocky hillsides with patches of loose soil. Eats ants and their pupae.

Spotted Leaf-Nosed snake - Phyllorhynchus decurtatus

Nocturnal snake found in sandy or gravelly desert areas which eats small lizards and their eggs.

Striped whipsnake - Masticophis taeniatos

Diurnal snake which seeks shelter in rock outcrops, trees and shrubs. Feeds on lizards, snakes and small mammals.

Coachwhip - Masticophis flagellum

Common diurnal snake found in creosote and blackbrush communities. Eats small mammals, birds, eggs, lizards, insects and carrion.

Western Patch-nosed snake - Salvadora hexalepis

Diurnal snake found in creosote bush and maybe blackbrush communities. Preys on small mammals and lizards.

Gopher snake - Pituophis melanoleucus catenifer

Diurnal climbing and burrowing snake common in creosote bush community. Eats rodents, rabbits, birds and their eggs.

Glossy snake - Arizona elegans

Uncommon usually nocturnal snake found in creosote bush community. Feeds on lizards, small mammals and other snakes.

Common kingsnake - Lampropeltis getulus

Prefers rocky outcrops in creosote bush community. Active in mornings and late afternoons, catching rattlers, lizards, birds, eggs, amphibians and small mammals.

Long-nosed snake - Rhinocheilus lecontei

Nocturnal snake found along roadways at night in creosote bush areas. Eats lizards and their eggs, small mammals and insects.

Western Shovel-Nosed snake - Chionactis occipitalis

Nocturnal burrower. Feeds on insects, spiders and scorpions.

Western Ground snake - Sonora semiannulata

Another nocturnal snake which has been reported in creosote and desert riparian communities. Eats spiders, crickets, grasshoppers and insect larvae.

Sonora lyre - Trimorphodon lambda

Climbing snake reported to prefer creosote and desert riparian areas. Eats small mammals and lizards.

Night snake - Hysiglena torquata

Nocturnal snake seen along roads at night. Creosote and desert riparian communities. Eats amphibians and lizards.

Sidewinder - Crotalus cerastes

Primarily nocturnal snake common in creosote bush and desert riparian habitats. Prefers open areas which allow it to utilize its "sidewinding" method of locomotion. Eats small mammals, birds, lizards and amphibians. Poisonous.

Speckled rattlesnake - Crotalus mitchelli

Most common in creosote bushhabitat but is also found in blackbrush, desert riparian and pinyon-juniper. Eats small mammals, birds, lizards and amphibians. Poisonous.

Mohave rattlesnake - Crotalus scutulatus

Snake common in creosote bush community. Not found in dense vegetation or rocky terrain. Eats small mammals, birds, lizards and amphibians. Poisonous.

Turtles,
Tortoises:

Desert tortoise - Gopherus agassizi

Classified "rare" by the State of Nevada. Completely terrestrial, burrowing reptile, present in creosote bush community. There are two periods of inactivity - estivation (June to August) and hibernation (Sept-Oct to February). Species feeds on leaves and flowers of annuals, which usually grow next to or on dirt roads. This accounts for large numbers being killed by automobiles. Many are also collected and taken home by people.

IV Invertebrates

Molluscs (Phylum Mollusca)

At least several forms of snails are found in arid southern Nevada (Oreohelix, Eremarionta, Vallonia). They eat plants, help decompose dead matter and are food sources for other wildlife.

Arthropods (Phylum Arthropoda)

Crustaceans (Class Crustacea)

Mostly aquatic animals which use gills for respiration. Important as food for larger organisms. Two fairly common groups of crustaceans are fairy shrimps (Anostraca) which are abundant in temporary pools of water and sowbugs (Isopoda) which seek shelter under stones, and fallen vegetation.

Millipedes (Class Diplopoda)

Commonly found in soil and debris. Feed on plants and decaying material. A few species are predaceous.

Centipedes (Class Chilopoda)

Commonly found in soil and debris and under fallen vegetation. Predaceous on other small arthropods. Giant desert centipede (Scolopendra heros), a nocturnal arthropod six to eight inches long can inflict a painful bite on humans.

Arachnids (Class Arachnida)

A large class of eight-legged arthropods whose most common orders include:

Scorpions (Order Scorpionida)

Nocturnal predator which eats soft-bodies insects and spiders. Kills prey by injecting venom into flesh of the victim with stinging tail. None of the species found in Nevada are fatal to man.

Mites and ticks (Order Acarina)

Abundant animals. Some species live in soil and are serious pests of valuable forage. Some are parasitic, important pests of man and other animals and vectors of disease. Others are harmless, aquatic inhabitants. Still others are important catalysts in the decomposition of debris.

Spiders (Order Araneida)

Well known predators which paralyze their prey with venom. Usually beneficial to man because they destroy insect pests. Several species are poisonous to man, however. Black widow spider (Lactrodectus mactans) lives in rock crevices, abandoned animal burros and under debris. Its venom assaults the human nervous system. Tarantulas (Avicularia spp.), large black/brown spider whose menace, lives in web-lined holes in the ground. Its poison is mild. This species does more good than harm by eliminating insects which damage forage.

Insects (Class Insecta)

Dragonflies and damselflies (Order Odonata)

Immatures are aquatic. Adults are large predaceous flying insects that prey on other insects near springs, seeps, potholes filled with water.

Grasshoppers and crickets (Orthoptera)

Group of insects commonly seen in desert environments. Some grasshopper species are beneficial because they consume undesirable shrubs and provide food for birds, carnivores and reptiles. Other species of grasshoppers and crickets destroy valuable grasses and succulent plants. In 1937-8 a serious infestation of Mormon crickets damaged many acres of valuable forage plants in Nevada.

Termites (Isoptera)

Insects found in colonies above ground in dry habitats. Important in decomposition of debris. Main diet is dry wood but also consumes dung and roots of plants. Is eaten by reptiles, amphibians, birds and mammals.

Earwigs ((Dermaptera)

Nocturnal. Most species are scavengers. Some are herbivorous feeding on dead leaves and cacti.

Stoneflies (Plecoptera)

Diurnal insects near springs. Immatures are aquatic. Adults feed on algae.

Thrips (Thysanoptera)

Tiny insects. Feed on pollen and petals. Can destroy plant cells and become vectors of plant diseases.

True bugs (Hemiptera)

Some species are aquatic (water striders, water boatmen, blackswimmers) and feed on algae or insects in springs. Other, terrestrial forms (plant bugs, assassin bugs) feed on plants or other insects. A few species feed on the blood of mammals. Conenose bugs (Triatoma sp.), which suck blood can be a hazard to man.

Aphids, scales, leafhoppers, etc. (Homoptera)

Very abundant plant feeders. Can adversely affect plant growth by removing plant juices and spreading plant diseases.

Beetles (Coleoptera)

Largest order of insects. Includes plant feeders, predators, scavengers, fungus feeders and parasites. Can be found underground, in trees, or in springs. Aids man by consuming unfavorable vegetation and insects.

Moths and butterflies (Lepidoptera)

Most species are plant feeders. Important as plant pollinators. Some species in larval form (like Great Basin tent caterpillar) damage important wildlife forage.

Flies (Diptera)

Some species (mosquitos, black flies, horseflies) are blood suckers and carry disease to man and animals. Other (robberflies) are predaceous on serious insect pests. Still other (fruitflies, leaf miners) feed on vegetation.

Fleas (Siphonaptera)

Small, wingless blood suckers. Bite and carry disease to rodents, birds, rabbits, carnivores and man.

Ants, bees, wasps, etc. (Hymenoptera)

Well-known order of insects. Most species very beneficial to plant (aid in pollination, seed dispersal, soil aeration and movement, destruction of insects harmful to plants). Because they obtain water at springs, seeps and faucets frequented by man, they are sometimes a hazard to him. Bites or stings of ants, bees and wasps contain small amount of venom and may cause allergic reactions in man.

SUPPLEMENT 1

PUBLIC COMMENTS

COPY

PUBLIC HEARING BUREAU OF LAND MANAGEMENT

ON

RED ROCK RECREATION LANDS

MAY 17 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

held

April 16, 1974

7:00 o'clock p.m.

County Commission Chambers
Clark County Courthouse
Las Vegas, Nevada

John Boyles, District Manager
Bureau of Land Management
Presiding

APPENDICES

APPENDIX A: Letter comments, R. O. Forson, Chairman, Nevada State Park Advisory Commission

APPENDIX B: Recommendations for revisions of the Red Rock Canyon Master Plan, Assemblyman Jean Ford

APPENDIX C: Comments on environmental statement, Red Rock Recreation Lands, M. Vincent Mowbray

APPENDIX D: Red Rock Canyon, a natural landmark study, Charles S. Watson, Jr.

APPENDIX E: Letter comments, Eric R. Cronkhite, Administrator, Nevada State Park System

APPENDIX F: Letters from students

APPENDIX G: Petition, dated April 15, 1974

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APRIL 16, 1974 7:00 O'CLOCK P.M.

MR. BOYLES: Good evening, ladies and gentlemen: I am John Boyles, Manager of the Las Vegas District of the Bureau of Land Management.

Before we begin our proceedings this evening, I'd like to introduce other members of the BLM staff that are in attendance for your identification.

Frank Bingham, our Chief, Resource Management.

Mr. Jeff Holdren, Area Manager for the Stateline Virgin Valley, Esmeralda Resource Area.

Mr. Bob Sulenski, our Environmental Coordinator.

From the BLM State Office in Reno, Stu Gearhart, Chief of the Division of Planning Coordination.

This hearing is being held to provide the public an opportunity to submit oral or written comments on the adequacy of the information contained in the Draft Statement relating to the environmental impact of the proposed recreation facility in the Red Rock Canyon Recreation Lands.

The National Environmental Policy Act of 1970, Public Law 91-190 requires the Federal Government to prepare an environmental statement on any action which significantly affects the quality of the human environment and to obtain the comments of any Federal, State or local agency that has jurisdiction or expertise with respect to the environmental facts involved.

A final statement will be prepared and the comments and statements presented here this evening as well as any other comments or statements received by the Bureau up to and including April 25th. Individuals wishing to submit written statements to the State Director of the Bureau of Land Management may do so by writing to the State Director, 300 Booth Street, Room 3008, Reno, Nevada 89502.

It is the desire of the Bureau of Land Management to obtain comments from the public relative to the level of recreational development which they feel is appropriate to the Red Rock Area, although this is not a requirement of the National Environmental Policy Act.

The proposed action under consideration is to implement the recreational facilities as as outlined in the brochure entitled "Recreation Management Plan for the Red Rock Canyon Recreational Land."

At this time I will ask Mr. Bingham to briefly point out on the map the major planned developments for the Red Rock Area.

MR. BINGHAM: The Master Plan was developed in 1968 with a team of planners from the Bureau of Land Management and the State Parks System that developed the Master Plan. There were numerous consultants to the Planning Team from Federal, State and County agencies in addition to conservation groups and individuals. There were three advisory committees that provided information and guidance to the planning team.

The dark boundary on the map outlines the boundary of the recreation area, recreation lands. The Master Plan calls for a number of campgrounds, roads and trails. There are approximately thirty-eight and a half miles of roads that are proposed in the Master Plan.

The Red Rock Scenic Drive comes up through close to Sandstone Quarry, White Rock. This portion of the Red Rock Scenic Drive, there is 15 miles of it; seven miles have been completed. This was completed in 1973. The remaining proposal that has not been initiated as yet involves another seven miles and leaves the existing roads that come up to Willow Springs, comes across towards Pine Creek and then back out towards Blue Diamond Road.

The Crestline Scenic Drive, approximately 20 miles, is proposed taking off near Sandstone Quarry up through and past White Rock and back over the top of the top of the Red Rock escarpment and back down to the Spring Mountain area here.

There is also a threeand a half mile road proposed that would leave the Red Rock Scenic Drive near Sandstone Quarry and would go to Brownstone Reservoir and from there would follow an existing wash back down to West Charleston. About three and a half miles of this road would be constructed: it would be a Jeep road.

Forty-five miles of trail are proposed, it would be a loop trail taking in the lower area of an escarpment, down in front of the escarpment, back up to Willow Springs here, and then back up on top of the escarpment and ending up down here at Mountain Springs.

There are a number of campgrounds proposed: The Willow Springs Camp Ground proposed for about 110 family units; this is a campground, the Icebox Camp Ground proposed would accommodate about 60 family units. The White Rock Camp Ground would accommodate ten family units. The Rams Head Camp Ground would accommodate 100 family units. This would also be developed and constructed as a picnic area to accommodate 100 family units of picnic use.

There is a picnic area proposed at Sandstone Quarry to accommodate 190 family units. Ash Springs is a group picnic area proposed to accommodate 70 family, or 70 persons -- excuse me.

The Red Springs is proposed as a group picnic area to accommodate two units of 150 persons each.

There is a proposal to construct a visitor center at this point on the map which is about, approximately a half mile from the Blue Diamond Road and approximately, oh, maybe a quarter of a mile from where the Red Rock Scenic Drive takes off from the Blue Diamond Road.

The staffing for the Red Rock Recreation Area was proposed for eleven people. This would include an area manager and staff.

The Master Plan identified certain private inholdings that were suggested as being desirable to be purchased and placed into public administration. One of the areas involved 120 acres up here in LaMadre Canyon. This property has been acquired by an exchange by the Burea of Land Management. The property was acquired back in 1972.

The State Parks System has recently acquired 80 acres in Pine Creek and the Spring Mountain Ranch down here.

There is a proposal for an administrative site over here called the Blue Diamond Administration Area. This would contain a three-bedroom home and an apartment complex of four units to accommodate some of the staff that would be working in the Red Rock Area.

There is a proposal for an administrative area down here at Mountain Springs. It would contain an apartment unit of two apartments and it would be people stationed at that area which would be a control point for the use in the upper portion of the Red Rocks.

That basically is what the Master Plan calls for and what the Environmental Impact Statement is designed to assess the impacts of.

MR. BOYLES: The draft and environmental statement also provide six alternatives to the proposed action and they are the full development below the escarpment with limited development above; limited development below and above the escarpment; full development below the escarpment with only primitive development above the escarpment; the fourth alternative is no further action; the fifth alternative is to restrict use to day use only; and the sixth alternative is the management and development of the Red Rock Canyon Area by another agency or private corporation.

Before hearing your comments and receiving your written statements, I would like to lay the following ground rules for our proceedings this evening.

Individuals desiring to make statements or present statements should, if they have not already done so, fill out the registration slips given to you as you entered and return it to the secretaries at the back of the room.

As your name is called, please come forward to the podium and state your name and who you represent. If you have a prepared written statement and it is lengthy, you may paraphrase its salient points for the audience, and we will accept your prepared written statement and insert it into the record as if it was written.

Based on the number of registration slips that I have received so far, I will set a time limit of five minutes per speaker to afford everyone who desires to speak an opportunity to be heard.

This hearing is not for the purpose of debating technical or political questions, but to gather information and comments to assist in the preparation of the final Environmental Statement which will be prepared after receiving all comments.

At this point in time I will ask the first speaker to come forward. Mr. George Potter.

MR. POTTER: I am --

MR. BOYLES: Will you use the microphone, Mr. Potter?

MR. POTTER: Okay. I am representing them four grandkids of mine. I took them up over Oak Creek and I found the water. I found it forty years ago as I went up there and followed the busted beer bottles and found it again. If you build any roads up closer than they are now and don't have a ranger at every canyon it will be polutted.

My hometown is Mesquite, Nevada; born in 1902. I have been over this country when I was a kid. The Wilson Ranch used to be our camping ground. George Fails' family and ours, and two or three more families here; and that is all that could go up there. And we went up there.

If this BLM can control it and if the State can control the Wilson Ranch, it's okay by me. That's all I got to say.

MR. BOYLES: Thank you.

Terri Long?

TERRI LONG: I'd much rather talk to you in your office.

This is my first experience with an Environmental Impact Statement and it didn't come out the way I thought it was going to. I thought it was going to look at the road that was built up there and determine the impact that it had on the land, and I figured, well, that was going to take care of building the rest of it because it really messed up the first part. IX-10

That isn't what came out in the Environmental Impact Statement.

Why in the world, when you're planning for an area, don't you take into consideration how many men you're going to need to properly control and protect it? IV-12 People control has to be the most important thing when you are considering an area, no matter what kind of a development that you put out there. It's not going to be worth a darn if you don't have enough men there to handle the influx of people.

I got the feeling all the way through the statement that unless Red Rock is fully developed, the majority of citizens in our valley will not get all the use to be deserved from the area.

Well, I don't think there would be a better time in history for a minority to be heard: and if the majority wants a lot of development out there, then I'm a minority. I really don't care if we make recreation dollars off of Red Rock. And I'm sure the construction industry will not fall apart because it can't do any constructing in Red Rock.

As far as the very young and the old not being able to utilize it without a lot of development, that's a bunch of hogwash. I spent yesterday hiking in Red Rock up over Oak Creek all the way up to where the water runs under the big rock. It's probably about a three-mile hike and it's not too easy a hike. It was not only amazing that I made it, but it was surprising that my 72-year-old father and five children from 12 all the way down to four years old made it.

I love Red Rock for all its magnificent beauty. The wonders it holds far outweigh any treasures anyone would ever give me, and I'd like to preserve some of that for myself when I'll be 72 and my children.

Tourists and this majority that is spoken about want to just drive through and don't really give a heck about Red Rock can please drive somewhere else.

If you want to satisfy the majority and me, too, don't build roads and take the money and send them a picture postcard.

(Applause)

MR. BOYLES: Thank you.

Michael Plyler?

MICHAEL PLYLER: I don't represent any group except, I guess, people like me who like nature. And I've lived here two and a half years and I had never been to Red Rock until two weekends ago, and I went hiking up in the mountains and the only thing that struck me more about Red Rock than the actual beauty of the area itself was the fact that there were beer bottles and candy wrappers and all sorts of other human garbage laying around.

And me and a friend of mine hiked up a canyon and it took us, like, an hour to get where we were going, and it wasn't an easy climb and yet there was still people had etched their names on the rocks, people who had thrown beer bottles all around and broken them, and I think if you put a bunch of campsites in there and allow more people to get in there and develop it like that, there will a lot more people wandering around, camping up in the mountains, bringing their garbage with them and dumping it.

I know, for myself, I did my best not to leave any garbage behind, but I think most people don't look at it that way. And the more people you get in there, the more garbage you're going to get. To me, I don't like to go out in nature and find people's names etched on rocks and broken beer bottles around.

(Applause)

MR. BOYLES: Thank you.

Polly Long?

POLLY LONG: I represent myself, and whatever you do to the area, please take care of it.

MR. BOYLES: Thank you.

George Roy McKenzie?

MR. MC KENZIE: I'll present my statement in written form.

MR. BOYLES: Fine. Thank you.

Mr. Brooks, as I understand it, you will present yours at a later time?

MR. BROOKS: Yes, written.

MR. BOYLES: Sheilagh Brooks.

SHEILAGH BROOKS: Sheilagh Brooks, and I represent the Nevada Archeological Association and the Nevada Archeological Survey.

And what I would like to urge is limited use below the escarpment with the primitive area above the escarpment; and I base this on a recent meeting held last week in Denver, notified to all of us archeologists at a Cultural Resource Management Meeting established by federal government agencies for practicing archeologists, and their concern was not to salvage archeology or mitigation, but conservation and preservation.

They are urging wherever possible to conserve our cultural heritage which is represented by historic and prehistoric sites.

I would like to emphasize here in the Red Rock Area the few surveys that have been done that we know that there are numerous archeological sites as well as historic sites.

And perhaps conservation would be the better part of valor. If we open them up for development and salvage them, they are gone forever. If we make it available for the public for walk-through areas, as at Willow Springs area or Sandstone Quarry, the sites get destroyed by too many people wandering through them, picking up materials, disturbing them. In fact, one particular area we feel should be added as protected and that is the area of 120 acres adjacent to the or near the Rams-Head development that Mr. Bingham pointed out.

That area is BLM land. We went up to look into it, and there are several unique archeological sites within that particular section which should be protected and preserved, not opened up for any kind of development, because if they are, they will be gone.

And it's been emphasized by people prior to my talk that once they're gone, there's no hope for the future.

So we would like to emphasize now the present attitude in terms of our cultural resource management, and that is the attitude of conservation, preservation and protection. IV-9

(Applause)

MR. BOYLES: Thank you.

Richard Rigels, is that right?

MR. RIEGELS: Right.

My name is Dick Riegels, I've been a resident of Nevada now for about a year. The whole subject of Red Rocks is very much new to me; however, I've been out there quite a number of times and I would like to make a few comments concerning your proposal on this area.

You stated that your Environmental Impact Study, the study made to determine the effects on environment of any plan which is going to affect, or effectively change that area; and you say supposedly for the benefit of its users.

In reviewing your plan, I would say that it looks as if someone has missed the boat. The science of planning has progressed a lot further than what you show. It seems to be a plan almost formulated in a schoolroom with the quote, unquote "family units."

It is a plan which has resulted from someone saying, "Let's develop Red Rocks." Much has been done with good intentions, I'm sure, but it's been done naively and, I'm sure, it's been with much insensitivity -- insensitiveness to the area concerned.

I would just like to say that no plan, or the fact that no plan is adopted is not a failure. It's just one of the viable alternatives to developing Red Rock whatsoever. And for this reason, I propose that BLM seriously look into the acceptance of alternate five and six, to develope none -- no development or further development of the area, leaving it in its state as it now exists and to changing the lands over to a body which can significantly control and maintain this area for future generations.

Thank you.

(Applause.)

MR. BOYLES: Thank you.

Bill James?

BILL JAMES: I like the Red Rocks the way it is right now and for that reason I support your alternatives four and five.

To implement this, I am perfectly willing to accept some sort of a permit system to prevent overuse. I think that most areas in the Red Rocks are accessible on day hikes and I can't see any reason why you need to provide overnight services.

There's a possibility that you might want to use a backpacker's overnight area up on top of the escarpment. But for camper-type camping, I think there is more than adequate services available in Las Vegas.

I think dirt roads out in the Red Rocks are a nuisance; they raise dust and they erode easily. I would like to see all roads that are going to be used paved, and all the roads that are not paved abandoned. I think that segment B of the loop road should not be built; rather that segment A should be brought straight back to the paved highway along the route of the existing dirt road.

IV-15

And I think rather than spending money to build picnic tables and parking lots, that the BLM should spend its money for adequately to police what's already there.

Thank you.

(Applause.)

MR. BOYLES: Thank you.

Daisy Talvitie?

DAISY TALVITIE: I have the reputation for being an environmentalist. And suddenly, I am going to sound like the homebuilders association or something, because I don't agree with everything that has been said so far.

I don't have a prepared statement. Basically, what I want to do is support the statement that will later be made by Mrs. Jean Ford and submit a detailed statement later with some specific criticisms of the Environmental Statement as it is presently prepared.

So I will talk only for a moment toward the philosophy that I support, if I may.

First of all, not all of the 72-year-old people can do hiking. I don't happen to be anywhere near 70. I happen to have a physical handicap that most of my friends don't know I have. I'm lucky if I can walk three or four blocks without intense pain. I've lived all my life in the outdoors and love it. I like opportunities to go out and sit at a picnic table once in a while. And I think there are a lot of other people in the same boat. Some of my friends might be very much surprised to learn that I have that handicap, but it is very much with me.

VIII-21

I feel that in an urban area that there is a necessity to serve our population as it grows. I do not agree with the term "full development" by any means; so I hope my environmentalist friends will realize that I am not saying go all the way, because I am not.

I think that the word I object to is "full development." I think I would like to say something closer to "balanced development." And many of the things, such as the Upper Crestline Road, I think, I would find objectionable.

I think that in your Environmental Impact that you need to examine in much more detail the plan to determine such things as archeological sites, which I support their preservation; determine those areas -- determine those specific areas in need of preservation at all costs. Determine what can be done to provide something for different elements of society and just may be the development accordingly adjusted downward undoubtedly. IV-9

But, nevertheless, let's keep in mind that we do have to serve recreational people other than hikers, and that it can't be all wilderness although some of it should be wilderness.

That's basically my philosophy. I will do a great deal more detailed, specific points where I think the impact statement is lacking, and perhaps suggesting different ways of modifying what has been done.

But, I don't think it's either-or, altogether. I think it's a balanced approach.

MR. BOYLES: Thank you.

Mr. Robert Forson?

MR. FORSON: My name is Robert Forson. And I am here tonight as the Chairman of the Nevada State Parks Advisory Commission. We will present, for the record, a written statement which I will brief at this time (Appendix A). It covers three main areas.

Number one, we feel the lack of attention given the management of the area; we feel that this particular matter is one of prime importance and that the impact statement is too brief in its handling of this particular idea.

The road system which has already been mentioned we also feel has not been covered adequately in the statement and we will cover that in greater detail when the staff submits their more technical advice.

We feel that the human experience in the preservation of wildlife and the continuing health and growth of the plant colonies are dependent entirely upon the natural water resources in the area, and we feel this also has not been adequately covered.

II-20

Number two, the state park system has been a partner in the development of the Master Plan and appropriately so. We feel that any inadequacies in the Master Plan should be shared by the State Park System. Therefore, also, we feel that the State Park System should be involved in the updating of the Master Plan at this time, and I am sure that they are ready, eager and willing to assist.

IV-10

Number three: The State has now become a major property-holder in the area. They are going to be most interested in coordinating the development of this area with the major philosophy for the development of the total complex. We want to see that this is continued and also offer support in this particular situation.

The State is already coordinating a program for the public at Spring Mountain Ranch for the upcoming summer. We feel that this needs to be looked into; there will be masses of people, I'm sure, interested in seeing that new acquisition by the State and we want to be sure it is properly handled so that the resource as well as the public experience are both of the highest quality.

It is my intention also tonight to express our appreciation for the efforts the Bureau of Land Management has made to be sure that all segments of the general public have an opportunity to be heard and, indeed, that their views may be considered as they relate to the management and development of the Red Rock Canyon recreation lands.

Since the State of Nevada has become a property-holder in Red Rock and will be actively involved in the management of those areas and the continued planning and development efforts as they relate to the total Red Rock complex, they will continue to be so much as they have been in the past in conjunction with those efforts of the Bureau.

As a partner in the development of the Master Plan, the State, of course, has an obligation and a vested interest to see that the best resource of people-oriented programs possible are finally adopted. I am sure that this feeling is shared with the Bureau of Land Management and I appreciate the opportunity to submit this tonight for your review.

MR. BOYLES: Thank you.

MR. FORSON: Thank you. I'd also like to say that any members of the audience tonight that would like a copy of the statement that the State Parks Advisory Commission is presenting, they may contact me or put their name in my book tonight and I will see that they are mailed one.

MR. BOYLES: Thank you.

Jean Ford.

JEAN FORD: Thank you, Mr. Boyles.

I have come to the conclusion tonight that I am listening to a different drummer, because two weeks ago I spoke at the wilderness hearings for Death Valley and was in the midst of a group of angry miners as I endorsed heartily the wilderness concept at Death Valley.

To night I get the feeling that I'm in the midst of a group of wilderness lovers and I'm going to advocate recreational development for Red Rock.Canyon. I don't quite know what is coming off.

I spent Easter weekend going page by page into the Environmental Impact Statement, and the old Master Plan, and spent Sunday hiking Ice Box Canyon and trying to see if there is a good route into Brownstone from Sandstone Quarry: and I have extensive pages of comment which I cannot give tonight because of time, but I hope they will be read because they were very carefully put together (Appendix B).

I would like to briefly review some of the key points that I have made. First of all, I would like to say that I think the 13 pages that describe the proposal in the EIS are totally inadequate to give anyone who did not, or hasn't really worked with the area or worked with the Master Plan, an adequate picture of the proposed action.

It very sketchily covers only portions of this plan and, as I recall, the final document here was really a summary of a much larger plan. But this is all I have to go with now and this is all that I really know of is the initial Master Plan. And so I did have to keep going back to this in order to be able to understand the Environmental Impact Statement.

So I believe that you ought to either attach the complete Recreation Management Plan to the final copy or either add some very substantial addition to the discussions of the

APPENDIX I

proposal.

I was appalled and really disappointed to find that the philosophy and the objectives under which the Red Rock Area was to be managed are not really spelled out in the EIS. So one coming in for the first time would really question what kind of philosophy you really had. And I think that, of all things, needs to be actually put in the EIS. I-1

The whole chapter on Administrative Management is completely left out, so everyone gets a very critical look at the idea that you aren't concerned with management or you are assuming it will happen.

And that's not true, I know; in either case. And it is discussed in the Master Plan and I think it also ought to be in the proposal, in the EIS.

Regarding general development, the key statement in the Master Plan regarding the objectives, the character of development, the handling of the development by different kind of phases, is completely left out and all one actually finds in the EIS is a bare listing of the roads to be built.

And, that's like waving a red flag at the people in Clark County. I think no wonder one gets the wrong impression about the priorities.

Also, it was curious to me to find that the general development map in the EIS is not the same one that's in the Master Plan. It takes care of the same general area, but there are some basic differences and I think that you ought to be using the same maps.

The next comment that I would make is that I feel that the EIS needs extensive updating to reflect the State's purchase of Pine Creek and the Spring Mount Ranch, and the resulting ramifications for water, livestock, the use of the ranch, and this type of thing: and this runs actually throughout the report.

II-50

I think it also needs a rather full discussion of the State's interest and involvement under the political heading and also at the place concering the last alternative.

II- 59

There are a number of other areas where it needs to reflect that the State has been involved, what the cooperative agreement is all about, the problems involved in trying to work this type of thing out.

APPENDIX I

I think the Plan needs to more properly and more adequately discuss the land use and zoning issues relating to private lands in the area. The new open space category that has been adopted by the Clark County Commission: and while it hasn't been applied to any area in Clark County, we all know that one of the areas it had in mind were the private lands at Red Rock.

II-59

I think it needs to reflect the past struggles to keep down condominium developments, et cetera, and the need for a special study of policy on different types of private

private development that would be adopted by the County.

I think the EIS is not accurate in stating in stating the Regional Planning Council acts as a clearinghouse for County planning, and it reflects some kind of protection that really is not there. II-60

I must comment on the chart on page 124 which takes all of the alternatives and is the place that you really began to get into the meat of the EIS.

I, too, object to the term, what you call "full development," since this implies picnic tables or something similar at every conceivable site. And I recall going back to the 1965 subcommittee report on the Spring Mountain planning unit which at the time we all supported wholeheartedly and thought it was the greatest thing that had come along.

It proposes development at twice as many sites of Red Rock as the Master Plan that was adopted in 1968. So I object to the term "full"; I think it's very misleading. Even the current master plan would leave the number of areas without development. And I think perhaps the word "moderate" or "balanced" would be better.

I think the statement at the bottom of the page regarding levels of management is entirely inadequate to cover the subject as needed.

Alternatives five and six are really management alternatives and can't be compared with alternatives one through four. It would be like comparing apples and oranges.

The alternative of day use only, and the alternative of holding for another agency could be used in relationship to alternative 1, 2, 3 or 4. And I think that they ought to be considered that way and somehow listed differently on the chart.

I'll skip on over because I know my time is up.

The map on page 126 assumes that the proposed loop B of the Red Rock Scenic Drive will be built as proposed earlier. I am appalled to see that the most controversial aspect of the present proposal, the road system on the valley floor, is not evaluated at all; and I agree wholeheartedly with Terri Long that that's what we thought we had waited two years to find, was what are the alternatives to the road system on the valley, on actually the valley floor.

I have attached to my comments a letter that I received back in July of 1972, from Eldon Holmes writing for Mr. Silcock, the Director of the BLM, explaining to me that the Environmental Impact Statement would consider all of the alternatives to the loop road and the environmental impact of each alternative. This clearly has not been done; it has to be done before the Impact Statement can be accepted by anybody.

I strongly disagree that the elimination of the Crestline Drive would greatly hamper the area's ability to actually satisfy the demand for driving for pleasure. I think there is still sufficient opportunity for the use. Some people, it's plenty for them to drive the Blue Diamond Road, to actually drive what's known as the Blue Diamond Road and then go home.

We are now going to provide the Red Rock Scenic Drive on the valley floor; people can go into the Spring Mountain Ranch and into some of the other areas that we would develop; that provides them with plenty of driving for pleasure.

And I would suggest there other kinds of recreation to be considered out there. I highly question the rationale that goes throughout the whole EIS, that removing the opportunity for more driving for pleasure has a highly adverse impact. I disagree completely.

I also disagree with the rationale used that you can consider the adverse impact from less dollars being contributed to the construction industry in this town. I think the adverse effect to environment being studied should be the prime factor under consideration. Attempting to reach a balance between preservation and providing the public opportunities to enjoy the very area that you're trying to preserve.

III-22

MR. BOYLES: I ask you to conclude within the --

MS. FORD: Okay. I will conclude by saying that I have worked for over ten years for the preservation of Red Rock Canyon so that it can be forever enjoyed by the residents and also the visitors to Southern Nevada.

I believe it is possible to achieve a balance between meeting recreation needs and also preserving the resource.

I have attached 15 specific recommendations for updating the Master Plan which I will give **you** and also will give to Mr. Cronkhite. And I look forward to working with all of you. Thank you.

MR. BOYLES: Thank you. Are you going to submit that then?

MS. FORD: Yes. I have a copy back here for you.

MR. BOYLES: Okay, fine. Please give it to the Reporter.

Glade Koch?

GLADE KOCH: I am the secretary of the Southern Nevada Branch of the LaHoughton Audubon Society (sic.). And our group statement was prepared by M. Vincent Mowbray.

Mr. Mowbray is personnel director for the Nevada Operations Office for the AEC here in Las Vegas, and he is also a graduate ornithologist. He has observed birds chiefly in the Pine Creek and Oak Creek Canyon areas for the last seven years in his leisure time.

Mr. Mowbray is coordinator of observations in Southern Nevada for reporting to American Birds and other ornithological journals.

An environmental statement, to be effective and accepted, must be both accurate and complete. In at least one respect, the draft environmental statement for the Red Rock Recreation Lands does not meet this test. This lack of accuracy can only serve to make other parts suspect.

The portion to which I refer is entitled "Wildlife," beginning on page 40, and particularly the part relating to birds on page 46 and 47. There is a list of 50 species of birds in the Red Rock Area. This list, aside from being woefully incomplete, lists one species -- cardinal -- which, to my knowledge, has not even been seen in Nevada, and several species which, if they have been recorded in Red Rock, occur very rarely.

APPENDIX III

On the other hand, there are an additional 40 species, 40 to 50 species, which are not included and which are of regular occurrence in the area.

The attached list of 104 species comes far closer to accurately reflecting the true birdlife of the area. In the discussion of birdlife, mention is made of only two species, and these are the only birds in the area for which there is hunting season. Apparently this was done on the basis that there is prime concern for those species of interest to hunters.

Among the birds to be seen in the Red Rock Area are a number which are restricted to the Southwestern deserts and which are by no means abundant anywhere in their range. For example, of the eight species of thrashers found in the United States, five occur in the Red Rock area.

A quick glance at the enclosed list by a competent ornithologist will reveal a number of other species which are more or less unique to this area.

I strongly recommend that your final statement base the list and discussion of birdlife on accurate data obtained from a competent source.

APP. III

The group, the Society, because the observations that they have recorded have been done principally in Pine Creek and Oak Creek, believe that there is every chance that we have not sighted and recorded a number of species in the Red Rock Area. The Society would offer its records and assistance in any program to arrive at competent data.

The following additional comment on page 84, the statement of species having a high threshold of tolerance to the presence of man such as birds reflects a lack of either knowledge or understanding of the facts.

A number of the species of birds found in the area have a low threshold of tolerance for any disturbance to their environment. In this respect, they are not significantly different from most desert-dwelling mammals, reptiles, amphibians and insects.

III-12

The desert is a very fragile environment and any undue disturbance has disastrous results in terms of the flora and fauna. With this consideration in mind, it is incumbent on all of us to make every effort to preclude the possibility of adverse effects in the Red Rock Area.

M. Vincent Mowbray. Thank you.

MR. BOYLES: Thank you.

Thalia Dondero.

THALIA DONDERO: Thank you, Mr. Boyles.

I am Thalia Dondero representing the Red Rock Resource Advisory Committee tonight, and at the onset, it would perhaps be appropriate to explain that the Red Rock Resource Advisory Committee is composed of 15 to 20 citizens of Clark County with a wide acquaintance of the Red Rock Canyon and have devoted much time and effort in lending their various talents to the development of the canyon lands as an area that would help fulfill the human experience in outdoor recreation.

The Committee members represent a wide spectrum of outdoor recreation and conservation interests. They are appointed by the Nevada State Park Service Advisory Commission in consultation with the Administrator of the Nevada State Parks System and the District Manager of the Las Vegas District of the Bureau of Land Management.

The Committee's prime function is to serve as a community contact for those governmental agencies involved in the management and development of the Red Rock Recreation Lands. It is the chief aim of the Committee to present recommendations on questions of management and development, funding, legislation, and other matters related to the development of Red Rock Canyon. And having myself a keen interest in these pursuits since 1961, I can say with total candor and no small measure of pride that the members that I have served with have devoted themselves tirelessly and selflessly towards realizing in the Red Rock Canyon a legacy of outdoor recreation for generations not yet born.

And it is in this spirit that the Committee approached its analysis of the Red Rock Canyon Environmental Impact Statement. While our recommendations may be at variance with those of others equally interested groups, they are not irreconcilable.

I should point out at this juncture that the Committee recommendations are aimed at bridging the immediate needs of Red Rock Canyon with the long-range goals of the area. In connection with the former, the Committee took into consideration the absence of the defined management. The lack of enough supervisory manpower in the field by appropriate governmental agencies and the need to preserve the environment of the Red Rock Canyon, much of which is extremely fragile and subject to irreparable damage if safeguards are not applied in adequate proportion.

I should like to add that the following recommendations were approved in open session by the Committee with the majority of the membership present and voting unanimously in favor of each point. Our recommendations embrace the plan described in alternative three of the Impact Statement.

This is not then to say we consider Alternative III the only plan worthy of consideration; rather, it seemed to be the plan with the greatest degree of flexibility from which a finished alternative could be honed.

The Red Rock Resource Advisory Committee is on record as recommending the following:

One: Until positive and adequate crowd controls
are established, only dawn to dusk recreation use should be IV-13
permitted in Red Rock Canyon lands and only in designated areas.
Picnicking should be allowed only in designated areas; campfires IV-12
permitted only in designated **fire** facilities with no use
allowed of natural material such as shrubs, trees, for picnic IV-8
fires.

Two: Limited access, that is to say, service
roads into all major side canyons, including Brownstone Canyons, VIII-
be for official use only. That the Valley floor loop road be 30
channeled along the present loop road and not to the Pine Creek
enclave.

Further feasibility study of the loop road be made to determine where it could fit into the terrain without being a detraction from the surrounding desert area. And that one-way traffic be considered for Segment B road.

Four: That bicycle traffic be considered inherent IV-16
in the planning of roadways.

Five: That there be no development in Red Rock

Canyon south of Bonnie Springs Ranch and that there be no motorized travel on any unimproved roads. Further, that any of the off-road vehicle roads in the area be artificially restored to their natural state on desert floor covering.

Six: That any plan to improve a crestline or summit roadway on top of Red Rock escarpment be abandoned. That this area be limited to natural trails in their present state.

Seven: That the road to Lovell Canyon from the Willow Springs area be maintained in its present state.

Eight: That the Red Springs area be designated a general public use area and, if acquired, Ash Springs be designated for group use area.

Nine: That high priority be given to installing trails in critical areas, trails designed by appropriate signs to minimize erosion and ground damage.

Those are the essential recommendations drafted by the Red Rock Resource Advisory Committee. And it goes without saying that Committee members will be extremely interested in the recommendations of the other groups and are prepared to work in harmony with all concerned to develope the best of all possible plans to reach a common goal.

Thank you.

MR. BOYLES: Thank you.

Joy Moore?

JOY MOORE: Mr. Boyles, my statement is in the mail.

I wasn't sure what to put on that, they said written; but it's in the mail.

MR. BOYLES: That's fine. Thank you.

Christine Ferris.

CHRISTINE FERRIS: I will submit a written statement.

MR. BOYLES: You will submit a written statement· thank you.

Rolf Peterson.

ROLF PETERSON: I am Rolf Peterson, speaking as an individual.

The Environmental Draft Plan, I think it is most impressive in its thickness. I think in many respects it is a perfunctory treatment, maybe a snow-job. The unsupported positions and somewhat superficial data in many respects, I guess it's biggest weakness, it is based on an outdated plan, the plan of 1968.

My feeling is that plan, while it gave some lip service to the esthetics of the area, that it was really based on building facilities to meet the demands and not on the esthetics, preserving the esthetics of the resource or the compatibility of the development with the resources.

I think since that time that I developed those opinions and when the plan was published my views have been reinforced, if anything.

The alternatives listed in the EIS, or the draft statement, are very vague; they do not consider criticisms that have been expressed on the Master Plan. There have been repeated meetings to express concerns which have not been taken into account; in fact, I think consultation and coordination with other sections is very selective.

I have attended many of the meetings which are summarized in that section, and I know of others that were not included in that, possibly because of poor record-keeping. Also, I note that the last entry was in April, 1971; the meeting held in June of 1972, which stopped construction on the B Segment of the road and raised many questions which really added emphasis to the drafting of the Environmental Statement, is not considered or mentioned in the statement. IX-8

I think that the statement must include management philosophy as well as facilities. And, more specifically, should include means to manage the people and to protect the resource, as well as just the spectrum of facilities to be developed.

I think that balanced development can be made of the area. Full development again, as others have expressed, is not the term to use. Much of the area below the cliffs is well suited to day use development; some areas to very intensive development; some to very little, particularly at the mouths of the canyons or the escarpment.

I think the road plans need to be considered in much more detail, both the B Segment of the existing plan, which

I think should follow the existing alignment rather than the proposed alignment: and more consideration should be given as to exactly what to do with the crest road, including the segment of it through LaMadre Basin.

In summary, I think it's really -- I'm very disappointed in the Impact Statement as it is drafted now. I hope that it will be revised substantially to consider the present alternatives, not the ones that we were talking about six years ago.

Thank you.

MR. BOYLES: Thank you.

James Lee.

JAMES LEE: I'll submit a written statement.

MR. BOYLES: Billie Jean James.

BILLIE JEAN JAMES: I am Billie Jean James. I would like to present this statement for the Las Vegas Group of the Toiyabe Chapter of the Sierra Club. We will be sending in a larger statement; I'm going to just present a shorter summary, Appendix B.

We do not purport at this time to provide a detailed site-by-site, road-by-road critique of the present plan. We do feel, however, that existing information requires consideration of several factors.

Preserving the current scenic wildlife, plant life, and other values of Red Rock must be the principal goal of any plan. Wherever development is allowed, it must be designed consistently with this goal.

More attention must be paid to management. No site should be developed so that it has anything but a localized minimal, visual impact. No site should be so large so as to cause overuse leading to pollution of streams and destruction of education.

Control of access may be necessary. No site should become a parking lot. Most areas below the escarpment are easily accessible by foot. To the extent that mechanical transportation is needed, attention should be paid to the alternative of offsite parking with access by elephant trains such as used in Yosemite National Park.

No facilities should be placed near springs to impair natural water resources through pollution or erosion. There is no need for more than one road to any site. All other roads should be closed. The location and design of such roads as are allowed should be based on careful analysis of the location of existing roads and the visual and other environmental impacts of any proposed roads.

It is possible, but the negative visual and overuse impact of a paved roadway may outweight the air pollution effects of not paving. We see no reason for any development west of the escarpment. The effect of such development on wildlife would be great and negative. The effect on the scenic appeal of Red Rock would be great and negative.

Recreational benefits would be minimal. Other uses would be severely impaired. Recreational uses which may benefit already have available the sandstone regions of Calico Basin and Sandstone Quarry which offer an experience which is in many respects similar to those available on the escarpment.

The factors which require rejection of alteration of the escarpment, together with the additional concern for the negative impact on the watershelf require subjecting development in the escarpment canyons to extreme scrutiny.

To the extent that additional capital-oriented recreation sites are deemed necessary, we feel consideration should be paid to such areas as the Krupp Ranch and the area around the proposed Blue Diamond Administrative Center as alternatives to the unique and fragile canyon areas.

In addition to requiring a high level of caution in proposing any escarpment development, we feel that there is already enough information to require changing plans regarding some of these canyons.

The Environmental Impact Statement indicates that proposals for Ice Box and Lost Creek Canyons were items of limited benefit. The importance and fragility of the life-supporting systems in these canyons is such that we do not believe that is sufficient justification for development in them.

Pine Creek is a unique ecological resource.

It follows from the general position we believe must be taken with regard to Red Rock Development, that Pine Creek should not be subject to potential developments which impair its special qualities in order to provide facilities for uses which could equally well be served if located elsewhere. Pine Creek should be preserved for educational purposes.

Such development, if any, as does occur should be far from ecologically fragile areas and all use must be carefully supervised. IV-6

And that concludes the statement for the club. I would like to just add one brief postcript as an individual.

I think after having lived for one year back east, in Maryland, in the Baltimore-Washington, D.C., region, that we in the West just do not realize the possibilities of a few years ahead of something so accessible. After living there and having to drive sometimes four and a half, five hours to get to West Virginia to escape people and then to only have motorcycles roar at us -- I think we just must be very careful with fragile, beautiful place like Red Rock that is so close to home and to our City; because back East, even though there are little wooded lots, that's about all that is left, that are set aside for people to go walking and enjoy nature.

You never can escape people, and I just feel that we must be very, very careful in any development. We don't know, and I'd hate for us to find out too late -- when we lived there, weeks of going out, and my son asked my husband, "What would you like for Christmas?" And he said, "I'd give anything for a walk in the Red Rocks.

Thank you.

(Applause.)

MR. BOYLES: Eric Peterson.

ERIC PETERSON: My name is Eric Peterson. And I would like to go on the record as supporting alternative plan four which opposes any further development of the Red Rock Recreation Lands except for the following conditions. And that is that I think an adequate number of personnel should be hired to manage and control Red Rock Area.

I don't think there are enough people out there now patrolling it and regulation of things. People have carelessly littered, I know, especially in Pine Creek and over in Willow Springs.

I think the idea about paving roads in many of the canyons is very, very poor and would have an extremely adverse effect upon the environment, both the botanical and the esthetic environment.

Being this close to a City, paving roads up to Red Rock would make it so easily accessible to a large influx of people and people who may not necessarily have the interests of Red Rock and beauty in mind and would just come up there to jerk around and make the place a little bit uglier, leave it uglier than when they were there before.

MR. BOYLES: Can you speak up? I'm not sure everybody is hearing what you have to say.

MR. PETERSON: Also, I think that a better study should be done of the effect that drilling wells in the area would have on the water level in the streams and springs around there. I think it might have some pretty adverse effects; that should be more carefully studied as was pointed out by previous individuals.

I would like to stress that I think Pine Creek Canyon especially should be given careful consideration as to what is developed out there. I think it should be left as primitive as possible for a very unique and beautiful area. I think there are at least 12 plants growing in the Pine Creek Canyon Area, both north and south, which are unique to that canyon or the surrounding vicinity, and which grow nowhere else in the world. II-29

Also, as has been mentioned before, the bird population out there, some of them are very unique and specialized, and have limited environment in which they live; and a large influx of people would tend to disrupt this balanced ecology. III-12

I just want to see the whole Red Rock area left as primitive as possible with an increase in control and management to preserve the beauty and wonder which that area generates. Areas which have been made accessible to mass population influxes, in my experience, have generally, after a period of time, began to look threadbare, ragged and beaten.

And, I'd like to postpone that for this beautiful, majestic area.

(Applause.)

MR. BOYLES: Thank you.

It is now 8:30 and I think we are approximately halfway through the comments, the slips that have indicated they wish to make comments. At this point in time, we will take about a ten-minute break to allow people to stretch, and in the interest of the fingers of our Reporter.

(Whereupon a brief recess was had.)

MR. BOYLES: If I may call the hearing back in session again.

James March?

JAMES MARCH: I have been to Red Rock Canyon a few times and it's really a beautiful place. I feel to change it, it would ruin it because it would bring in a lot of people; and wherever people seem to gather, they leave a lot of refuse.

I think that it would also ruin it for us, but more so for people who have not yet been able to see it. I think it would really be harmful not to let people see it in its natural state.

MR. BOYLES: Thank you.

David Alger, do you wish to make a written statement, oral, or both?

DAVID ALGER: I'd like to say I've been hiking in the Red Rock area for most of my life now; my dad's taken me up there when I was about three years old and I've gone ever since then. And I was studying that map and I was hiking around the area, looking at what you're going to be doing; and I've noticed that one of my favorite places up there, which is Booth Lake Springs -- I don't know how many people have ever been there -- but the road would go right up above it and right now the spring runs pretty well. And, with the amount of equipment and stuff necessary to make that loop road over the top, there would be almost no way that that spring could last very long in the condition that it's in.

And I know that the way my dad was telling me that it got there was by the bootleggers up there making their whiskey and now all that's left is the bottom part of their still. But the water runs in there and makes a little bit of a pond which is a great camping place, because there's a little meadow right behind it.

And on your map there, there's a road goes right almost next to that spring, and I know there's no way it could last with the amount of people going through there. And I know

I'd like to see it stay there and I hope everybody else does, too.

(Applause.)

MR. BOYLES: Thank you, David.

Myron Nicholson.

MYRON NICHOLSON: I just have a written statement.

MR. BOYLES: All right; to be sent.

James Corey?

JAMES COREY: Written statement.

MR. BOYLES: Written statement.

Gordon Eggleston.

GORDON EGGLESTON: I'd just like to make a brief statement. I've lived here 25 years; I haven't used the Red Rock Area too much, but I have hunted Bighorn Sheep up in there and I would say I've hunted all over the County, plus I've just cruised around the area like most people that's outdoor type.

But next to the biggest group of Bighorn Sheep probably in the County is up along the top up there and they have to drink up on top where the water gets caught in a big catch basins of those big sandstone rocks in summer.

I see your statement says you're going to develop LaMadre, but if it doesn't take in the forage that they are going to eat over there. I think when we start moving our wildlife around we should think about the eating as well as the water. And I'd like to speak in opposition to the upper road

III-12

on record.

Also, let's not drive our wildlife off the mountain just for us people.

That would be about the amount of my statement.

(Applause.)

MR. BOYLES: Thank you.

Charles Watson.

CHARLES WATSON: I have a rather lengthy statement and I'm not going to try to read all of it tonight.

My name is Charles S. Watson, Jr., and I am Director of the Nevada Outdoor Recreation Association and the National Public Lands Task Force.

I'd like to start out by saying that our organization was one of the oldest pioneering organizations in the idea of fostering programs like Red Rock Canyon within the Bureau of Land Management.

I want to commend the State Park Service in its purchases that have been made up to date, at this time; I think this is a commendable effort and I'm going to congratulate Eric Cronkhite in doing these purchases.

However, I must emphasize and reemphasize our commitment towards keeping these lands in federal ownership that are now in federal ownership in the area.

We have scrutinized the Impact Statement and I'm just going to make some off-the-cuff remarks. I won't try to read this statement which is quite lengthy.

We tended to -- the Alternative II of the Statement looked attractive to us, but quite frankly, I have to feel the same way the Wilderness Society and other conservational organizations feel, that there is not an alternative in the Statement that we can live with as of yet. We feel that it is inadequate in many respects concerning wildlife, concerning rare and endangered flora, rare and endangered animals, primitive area values.

We feel that one of the most objectionable phases of this Impact Statement is the open space corridors which have been designated on the map number two, which would allow the extensive and very highly objectionable road constructions -- referring to the Crestline Road and the Brownstone Loop Road which we are vigorously opposed to.

We would like to see a minimal development of the Valley floor to the extent that it's for day use only. We do not endorse the idea of overnight camping in this area.

We are concerned about the archaeological development and archaeological sites, particularly the northeast area which, as you well know, there has been considerable destruction of not only heiroglyphs and pictographs, whether there is an actual black market ring operating today which is carting these various things off for sale to rich land-owners, rich condominiums and so forth. We have an incident down here on the Colorado River, which was appalling, where these entagwheels which are mentioned in the movie, the Chariots of the Gods, and these off-road vehicle people deliberately crashed the fence and deliberately gouged these figures up and destroyed them -- 10,000 years old.

It's incredible that these kinds of things be allowed to go on, and I just think that by building more roads and making more lands accessible to people like this, it's going to result in more destruction taking place of these things. We should be thinking about reserving an area like this for future generations, for all mankind.

It isn't just for me; it doesn't matter what I -- whether I get in to see this area or not or anybody in this room. This is our heritage and it should be protected. And I hope that this Statement that we have put together, put together ten years ago -- and I'm glad to see that it's finally coming to fruition now -- I want to emphasize my support for BLM programs like this and I hope that they are going to be enhanced and that we have more of them; but not to close them down as now proposed by the Nixon Administration, as I have recently heard, this rumor that is floating around that the Office of Management & Budget wants to scale down BLM programs. I am opposed to this.

I hope that all conservationists will learn to support BLM programs and try to get reforms going; things like this.

I don't want to take up anymore time; I want to thank you very much for giving me this opportunity to testify. I will leave this statement with your representative. (App. D.)

Thank you.

MR. BOYLES: Thank you.

William Lowman.

WILLIAM LOWMAN: My name is Bill Lowman; I'm a 20-year resident of Southern Nevada and I represent a rather loose-knit group of technical rock climbs, who are -- some of us are here this evening and some of us are around the community.

And, we are here favoring the limited development below the escarpment and no development above; as absolutely our wholehearted feeling there. There are bout 15 to 20 rock climbers that use the Red Rock about -- I would say, on a general average, except for the coldest times of the year -- use the Red Rocks four days out of seven every week. Two of our members just came down of a climb this afternoon when they heard about the meeting here this evening; came down off the climb and came in for the meeting. II-56

We are a group of people that you don't see very often because we look rather small up there next to the rocks. We favor any use of Red Rock Area that parallels the existence of the natural physical aspects already, but as the gentleman already stated, a couple of people ago, a loop road, a road above the escarpment -- a loop road -- would simply ruin the use that the Bighorn Sheep have of that area. It would also ruin the solitude and the beauty that climbers find so necessary for part of their life.

I'm not up simply to push climbing; I simply want to say that most of us have spent many hours and many days, and a lot of nights on the summits on either end of a climbing rope. We feel probably as much a part of those rocks, as much or more than any of the people that are here today. We have climbed in all of the canyons and all the cracks clear down the end at Potosi towards Calico Basin.

I noticed in your management plan that it's said that there would never be any problem with rock-climbing in the area because of the sandstone. And I'd like you to know that there are 125 routes in the Red Rocks today; a hundred and twenty-five technical climbing routes, and it is one of the finest areas for climbing in the southwest simply because of the beautiful desert varnish in sandstone. II-56

There also isn't much of a problem with rescues because it's pretty hard to get in over your head up there unless you know what you're doing, you can't hardly get in too deep. But we feel that the worst thing that could happen -- to reiterate -- is that the Crestline Drive could be put in.

We would simply like to say that not only is full development not the term to use; it's simply not the thing to do with the Red Rocks.

MR. BOYLES: Thank you.

David Bernhardt.

DAVID BERNHARDT: It seems that almost everything has been said already, but I would like to maybe reemphasize a couple things.

I would like to see limited development to preserve the values that are cause for developing it in the first place. If there wasn't something valuable out there, I don't think anybody would be interested in developing it into a recreational area. So, let's preserve what is there.

And I would note that this philosophy I don't think is really spelled out in the Statement and is not indicated by the primary alternatives indicated.

I would like to, without going into them, just give backing to the suggestions or recommendations outlined by the Red Rock Resource Advisory Committee; and that I think that these also have been basically followed by Southern Nevada Open Spaces Council.

I would indicate that we should make development there only with full knowledge of the mistakes that have been made other places without repeating them; some of these mistakes have been indicated tonight, such as Yosemite and other places, where they have found out they have tried to back up and try to do away with some of the developments they've made and have less vehicle traffic, this type of thing.

I would say that it's preferable to try and have one management agency for the whole area or, at least, you should emphase that, if there is both the State and BLM, that they have to work awfully close together because of the very close-knit area.

Thank you.

MR. BOYLES: Thank you.

Mr. Cronkhite.

ERIC CRONKHITE: Mr. Boyles, my name is Eric Cronkhite, Administrator of the Nevada Park System; and as you well know, we are partners in this project with the BLM.

Our purpose tonight is to provide a statement plus a page-by-page report of some of the things we feel need updating, reflecting material, some inaccuracies and so forth.

As a partner in this plan, we feel that it would not be -- this would not be the proper time to take a stand and say it should be alternative one or it should be alternative five, or something else; but simply to listen here to the views that are expressed tonight, as you are, make the evaluation, and then take a stand as a result of the public influx that has been put into this EIS Statement.

We have, as may be noted, by my statement colluded with the State Park Advisory Commission, and we have basically the same feeling towards some of the inadequacies that do exist or deficiencies of the EIS Statement as it reflects the lack of suitable alternatives of management to meet the other alternatives of development; the lack of study on the Segment B road which is really what the -- the upper skyline drive which precipitated the Environmental Impact Statement some 18 months or so ago.

We also are concerned with the impact on water which has not been given adequate consideration in this report. III-7 And, one other one, we feel that there should be more emphasis under alternative five and six that this -- as Mrs. Ford pointed out -- these are management alternatives; they could easily be combined or should be, would be combined if implemented with other alternatives.

Our mission here tonight is to suggest, as has been suggested by our State Park Advisory Commission Chairman, as Mrs. Ford remarked, that the Master Plan for Red Rock Canyon be updated. I think we all agree, as well as you, that we have developed an EIS Statement around an obsolete plan, it was one that was developed some five or six years ago; and things have happened, there have been new attitudes in regard to the protection of environment; many new things have entered into the picture in that last six years.

I think that the usefulness of this impact statement will be that you will give us the guidelines for a course to follow as far as level of activity in the area and judging or taking or choosing a level of activity, we should update the Master Plan around that decision.

As you well know, the State Park System has acquired two parcels in Red Rock Canyon, the Spring Mountain Ranch and the Pine Creek Ranch.

We are on a biennial appropriation and we do have several hundred thousands of dollars right now that would be put in this project. However, this would not be our choice until we can update the program and Plan and until we can make a determination as to how these properties will best fit in the total Red Rock complex.

There are several alternatives especially as it would relate to the Spring Mountain Ranch which we can choose from; and before we can move out and spend any funds, those alternatives will have to be determined.

The State Park System is in a position to begin the update of the Master Plan with the advent of new fiscal monies in July. We ask, of course, the BLM's participation in this update so that we may have a plan that will reflect current thinking, current carrying capacities of the particular sites and to provide us with the kind of planning that reflects 1974 and also that will reflect the goals of the programs we should be carrying out on the State property.

The State Park System is also working presently on an operation plan from the standpoint of opening on a limited basis the Spring Mountain Ranch for public tours. This has not been completed yet but we do hope that during the late spring, going into the early summer and on through the year, that it will be possible to conduct tours of Spring Mountain Ranch so that the public may see what has been purchased with the State Park bond monies and the land and water conservation land monies, that have been put into this property.

Of course, these tours will go contingent upon our capability to manage people without creating any intrusion or destruction on the ranch itself. But this is something that we hope to get going very soon.

Prior to implementing the Master Plan update as it would refer to the State properties, we are now in contact with Dr. Richard Brooks, University of Nevada, Las Vegas, and he is prepared to undertake an archaeological survey of these properties on the Spring Mountain Ranch as well as Pine Creek properties, so we at least would have knowledge of where the critical areas are and what we have in the way of archeological sites in those two areas.

I am enclosing and will submit this for the record, and we perhaps will make an update as I suggested to you this afternoon due to some wording in here, poor grammar. (Appendix E.)

MR. BOYLES: All right, fine. Thank you very much, Mr. Cronkhite.

Dr. Fiero.

DR. WILLIAM FIERO: My name is Bill Fiero. I am speaking as a private citizen.

I would like to say that of the Environmental Impact Statements that I have analyzed, this is one of the weakest. I think that probably one of the main reasons for this is it is totally out of date. But, secondly, I think, as has been pointed out by many other speakers, it is most totally lacking in its understanding of the wildlife, both plant and animal, and the archaeological values of this particular area.

It is perfunctory to say the least. Since this is a draft statement, I trust that the final EIS will represent a much more professional job. As an example, the lumping together of all of the areas below the rim rock for single development purpose, whether you call it limited or full development, is foolish, in my estimation.

I don't think Price Creek is the same as First Creek, and I don't think that is the same as Ice Box or Sandstone Quarry. I think each of these areas ecologically and environmentally are separate and individual areas. Consequently, they should be viewed as such and evaluated as such as far as the impact for development.

But tonight, I want to speak specifically to two areas which are in my own area of expertise, and that's geology. I'm a hydrogeologist. This is probably the most inadequate statement that I have evaluated in a desert region in terms of its water. In this particular statement, there is virtually no inventory of the water resource of this area. II-20

If this area is going to be developed at all, one of the first things that should be considered in desert region is the water resource. I see no analysis as to what is going to happen to the salinities of the water in this particular area as pumping is going to take place.

Most of the wells which have been discussed for development for support of the camp and picnic areas are going to be developed in sands or shales which are noted for their gypsum. Gypsum is sulphate and it has a rather dilatorious effect to your internal parts, namely, it causes diarrhea if you get excess. I don't see any evaluation as to the water quality as far as the water wells which are going to be developed in this area. There's sufficient information that's already gathered that could have been put together in this Environmental Impact Statement. II-25

Even more importantly, I don't see any evaluation of the effects on the current springs as wells are developed in the Valley. Because of the lack of understanding by the Bureau of Land Management in part of the relationship of pumping of wells to springs, there is now a rather serious situation in Ash Meadows regarding the Devil's Hole pupfish; in fact, the federal government has been involved, as I'm sure you are aware, in litigation for several years because of that.

The allowing of wells to be drilled and the land swapping and sales that were allotted by the Bureau of Land Management in that area has endangered the Devil's Hole pupfish because of the pumping below a bedrock spring.

We have precisely the same kind of potential problem in the Red Rock area. Heavy development on the valley floor could affect in the flow rates of the springs in the valleys above, namely the ones that are on the Red Rock escarpment and the Aztec sandstone. III-8 I see no evaluation of this whatsoever in the Environmental Impact Statement. I think this is a critical area that deserves attention, because if wells are developed in the valley floor and if there is a connection to the springs above, you will destroy one of the most important resources in the Red Rock Canyon and that is the spring flow that takes care of the whole base of the ecological system in the valleys that lead out from the escarpment.

Secondly, in terms of the geology itself in the area, generally think that geology can't be hurt by too many people climbing around on rocks or whatever.

But, in truth, that is not so. I think I can give an example of that already from the Red Rock Canyon Area. There was a beautiful cave in Red Rock Canyon that had very fine stalactites, stalagmites and helictites. II-10 I had hoped to map that cave geologically before it was "discovered," in quotes, by the public. That cave is now largely stripped of almost all of its formations; it's on Bureau of Land Management land. This is a loss of a legacy for my children and for their children.

I think that this is an exact example of my greatest concern for Red Rock: Development of an area, potential development of an area without having a management and control of that area to protect it.

I visited that particular cave one time with a BLM man who was in uniform. We met a group of high school kids coming down the trail with armfuls of stalagtites: he could do nothing about it. In fact, the only person who could really be vocal in the right kind of terms to those kids was me.

I don't think this is adequate control of a public resource.

My last concern is one that's esthetic and not geological. I remember meeting with the former local director of the BLM here about the blacktop road which now exists in the BLM area up there.

We were told that there would be no cut and fill on that road other than what was absolutely necessary; that that particular road would be developed so that it would not scar Red Rock Canyon.

In my personal opinion, the greatest pollution in Red Rock Canyon today is the road that was built by the federal government with cut and fill. It has virtually destroyed the whole scenic aspect as far as the view north from anywhere in the interior part of the canyon; about all you can see in the lowlands is cut and fill.

If that's an example of the way the federal government is intending to develop Red Rock Canyon, then I'm opposed to any further development in Red Rock.

Thank you.

(Applause.)

MR. BOYLES: Thank you.

Richard Moser.

(No reply.)

MR. BOYLES: Marlen Hoesly.

MARLEN HOESLY: I am speaking tonight as a private citizen. And first of all I'd like to say that I concur with practically everything that Dr. Fiero said.

I am vehemently opposed to any even thought of putting in roads of any type on the top of that escarpment. It would completely ruin the view and the use of the area.

I do not think Segment B should ever be completed. I think the plans for that should be abandoned, and I think I'd even go so far as to agree with the gentleman that spoke earlier to tear out A and put it back the way it was, and build back the hills and put back the straight road in there that we can get back in on. I think that would really be something to seriously consider. I know it would be an awful lot of wasted money, but I think that's what it's been.

I think that we do have a problem in enforcing and policing the area and that has to be improved. I realize that you people nor the State has had the money to hire the people -- nor until, within the last few years, the authority to enforce. Now, I believe that does exist. And let's hope for the better.

I would like to see the existing dirt road stay basically as it is; it goes past Willow Springs into Lovell Canyon there. I think that is a very scenic road; however, I think that it's cut into the area in such a way that it's almost unnoticeable; and if people using that road travel it slowly enough to enjoy the scenery, that this is an out for people who really don't like hiking, but still want to get back and enjoy the scenery.

I personally oppose any further development, period, in the area until such time as the Bureau of Land Management has the ability to properly police and patrol the area and, then after that, perhaps some limited development on the base of the canyon.

Thank you.

MR. BOYLES: Roger Scholl.

ROGERTSCHOLL: I am Roger Scholl, Wilderness Consultant on the staff of the Wilderness Society of the

Western Regional Office in Denver, Colorado. The Wilderness Society is a national, nonprofit conservation organization of approximately 90,000 members.

The organization is primarily involved in educational programs to assure the preservation of wilderness for the use and enjoyment of present and future generations.

We wish to express our appreciation to those persons in the Bureau of Land Management for the work that has resulted in this hearing today. As a former resident of Nevada who recently moved from Reno to Denver, I am especially pleased to have this opportunity to comment on the proposed management in the Red Rock Canyon Recreation Lands.

I have visited the Red Rock Canyon Area several times, and I am truly amazed at the diverse, unique, outstanding values found in this small part of Nevada.

The Wilderness Society will not make specific comments on the Environmental Impact Statement which evaluates a 1968 plan which we feel is outdated. The 1968 plan can be said to be the result of pre-Earth Day thinking. The park and recreation planning has come a long say since turning the corner in 1970 as symbolized by the experience in Yosemite Valley last summer.

We will outline some of the concepts which we believe should be included in the 1974 recreation management plan accompanying the Environmental Impact Statement, for the

Red Rock Canyon Area.

The new concept in recreation planning is that each natural area should not try to be all things to all people. Each area should be used on its own terms rather than on our technological terms. This relates to the concept of diversity.

We preserve diversity in our lives by keeping natural areas wild so that our brief experience there contrasts sharply with our everyday experiences in the developed environments where we live.

Another concept is that park planning in our society should lead the way towards environmental wisdom. Modern thinking has pinpointed the automobile as the source of many management problems, rather than just the number of visitors.

Modern recreation planning emphasis should be on visitor services as opposed to visitor facilities. These kinds of concepts can be implemented in a plan in an Environmental Impact Statement for Red Rock Canyon by considering such specific ideas as public transportation within the area. Visitor facilities on the periphery, for example, a visitor center at the north entrance; day use primarily with overnight use by permit only; rangers who really range, much of the time on foot; programs to actively involve people in appropriate recreation.

As part of the basically natural use of the Red Rock area, the Wilderness Society urges the establishment of a formal primitive area on the LaMadre Ridge and from the base of the sandstone bluffs west with the inclusion of the southern end of the valley.

It should be noted that the Red Rock area was set aside for its unique natural features, not because it was simply an area close to Las Vegas which could accommodate large numbers of different kinds of development.

In closing, we give you a thought from Aldo Leopold several decades ago. Quote: "The job of recreational engineering is not one of building roads into lovely country, but in building receptivity into the yet and lovely human mind."

Thank you.

(Applause.)

MR. BOYLES: Thank you.

Howard Booth.

HOWARD BOOTH: Thank you, Mr. Boyles.

We appreciate the opportunity this evening to comment on the EIS on the Red Rocks. We've waited a long time for this opportunity.

The Open Spaces Council is concerned with study and educational efforts in the broad spectrum of environmental issues in Nevada and in the Southwest. Land management is one of the issues of particular concern to our organization. We see Nevada as especially fortunate in the number of areas deserving of protection that are still within government control.

Red Rock Recreation Lands, however, have a special place in our concern. Its unique values have been too well documented to need repeating in this statement. They were recognized by citizens as early as 1964 when a Sierra Club report recommended the area's protection as a natural monument.

The national significance of the area and unique resources which would have been appropriately recognized by such classifications is even more firmly established today.

National monument management is protection of the natural resource, and we believe that this principle should be paramount in any plan for development, in this area.

Indeed, the concept of the development in such an area implies its use as a tool in the preservation of resource values. It implies allowing visitation in ways that are in harmony with the environment and respectful of the special significance of its resources. It implies that adequate levels of management are likely to be far more important in any Master Plan than physical facilities which clash with natural values or compete with them for attention.

The proximity of Red Rocks to Las Vegas in no way alters these concepts. It merely challenges the resolve and innovation of management for preservation in the face of potentially greater impact.

It does not provide an excuse for yielding to what we believe are largely imaginary pressures for non-conforming development. The failure to recognize these principles was the overriding error in the 1968 Master Plan.

It accommodates access and use of the expense of priceless resources. The adverse impacts included changes in many cases permanent to topography, water, soils, vegetation, wildlife numbers and distribution, the primitive values, aesthetics, the antiquity and scientific values.

The suggested alternatives are inadequate improvements; they are simply the wrong alternatives to a bad plan.

The Nevada Open Spaces Council proposes a plan for consideration which maintains the integrity of the landscape and its resources. It would mostly restrict auto-centered activities to the outer edges of the park. It would make visitation to the delicate canyon environments a relatively easy pilgrimage by foot or horseback from one of the main roads.

It would discourage unsightly firepits or the destruction of picturesque snags for firewood, and by banning open fires except in designated places.

It would encourage visiting this area on its own terms, on trails that lead the visitor quietly and carefully through fragile areas and which tend to disburse rather than concentrate crowds.

It would give wildlife the maximum opportunity to coexist with man by providing for a natural environment of significant size and by not preempting water from the springs or potholes from which wildlife depends.

It would give management positive control of the visitors through entrance stations on all major road approaches, through adequate numbers of rangers through control of visitors through entrance stations on all major road approaches, and by limiting camping, and picnicking to daytime only, except for special permit for back country travel.

It would help develop an appreciation for the area and an environmental ethic to educate through education programs by means of a visitor's center and an interpretation program, an overnight education center at Spring Mountain Ranch, and by a general atmosphere that fosters such concepts; it would create a substantial primitive area in the south end of this Red Rock Valley and west of the face of the Sandstone Bluffs.

Such designation would provide spectacular and inspiring views that we feel would rival those in many national parks and monuments.

We'll have more detailed comments in the statement we will submit later. I just wanted to discuss philosophy today.

Thank you.

(Applause.)

MR. BOYLES: Thank you.

James Whitesell.

JAMES WHITESELL: I plan to submit a written statement after I have a chance to look thoroughly at the Environmental Impact Statement. But right now I am fairly sure that any statement I would submit would encourage limited or no development below the escarpment, and certainly no development above the escarpment.

Any reasons I might have for this come from experiences I've had in the Red Rocks on hikes or going out to climbe or whatever and very often ended up my day with a very bad feeling about what is happening in the Red Rocks. I may go out and you know, it would just be a beautiful day and somebody will drive out and on their way to enjoy the Red Rocks just open up their car and turn the radio on as loud as they can. That's just really great. Or somebody else may go out and their idea of enjoyment is to paint the rocks out there, put their troup number or the fact that if you're going to swim at the First Creek, you have to wear a swimming hat, or whatever.

Whatever they feel is appropriate for the area. I have been into Brownstone and I've watched people with pickups with as many engine blocks as they can put in the back trying to climb the hill next to the reservoir there. And we ask them if they didn't think they were messing things up or took down their license number with the obvious threat that maybe we would report them.

"Fill out a report; it's not going to make any difference, nobody's going to do anything to me."

I've camped on the top of Mount Wilson. I've sat up there and looked at all the cars down at Oak Creek, and somewhere in that area I've heard somebody shoot a rifle without any regard for anybody who's around there, whose kids or what.

I've watched people at the mouth of Pine Creek plinking at rats or whatever, without any regard for people who may be around there.

I've been into the areas around Hidden Canyon or Lost Canyon and several months ago I watched the smoke from a fire up near North Creek. It just really worries me that if there was going to be a fire in the Red Rocks that maybe this fire was going to be in this hidden forest near Bridge Mountain. Just a horrible fire there at the mouth of Hidden Canyon.

I've noticed a great increase in litter in Sandstone Quarry, since the paved roads have been put in there.

All these areas are very accessible to me and all I have is a very little low-slung Camaro. I hate to think of what's happening in areas that people can drive into with their high wheel base vehicles or trailbikes or whatever.

It seems to me like one of the major problems with any development in the Red Rock is just, from what I've observed, there seems to be very much of a shortage of enforcement personnel out there; and when there are enforcement personnel around, they don't have any regulations, any enforcible regulations that they can use to protect the Red Rocks at its current level of development, much less to try to protect it at a higher level of development.

Thank you.

(Applause.)

MR. BOYLES: Cindy Butler.

CINDY BUTLER: I'm reading this statement for Kevin Dahl of Scotsdale, Arizona, who's representing the Friends of the Earth who's a national organization of over 22,000 members. It is dedicated to the preservation and restoration and rational use of the earth.

"We appreciate this opportunity to represent our views on the Environmental Impact Statement prepared for the management plan for Red Rock Recreation Lands. The Red Rock Area is a truly natural and valuable resource not only for citizens of Las Vegas, but for the entire nation.

"I went there recently for the first time and was lucky to see four desert Bighorn Sheep after only a couple of hours of hiking. To have such a uniquely primitive area so close to a metropolitan city is indeed fortunate.

"I, as a visitor to Las Vegas was impressed to find an area like Red Rock nearby. It offers high quality outdoor recreation to those who care to experience this country on its own terms, which means leaving one's car to walk for a little bit.

"Development to make this place easier to get to or more convenient will serve to bring more visitors, but it will degrade the land's integrity and thus degrade everyone's recreational experience.

"Friends of the Earth ask that the Red Rock Recreational Lands be managed consistent with its primitive qualities. Protecting and preserving its wilderness characteristics, the areas, the wildlife, and guarding against needless vandalism, is much more important than inappropriately underdeveloping this marvelous area.

"Nevada conservationists have studied this issue for some time and have many good suggestions. We urge the Bureau of Land Management to consider the recommendations for managing this area in its primitive condition."

Thank you.

I'd also like to submit a statement of my own and today I had a very rare and overwhelming experience of seeing a group of wild horses out in the Red Rock Area. And it's just one example of the uniqueness of Red Rocks and the experiences that can be experienced by people out there if the area is left a primitive area.

Therefore, I totally endorse that the Red Rock should be left in its primitive condition so that all can experience the kind of experience that I saw today.

Thank you.

MR. BOYLES: Thank you.

Mary Kozlowski.

MARY KOZLOWSKI: Mr. Boyles, I'm Mary Kozlowski, and I'm just speaking as a citizen, and there are a few comments I'd like to make concerning the Impact Statement, and several others besides.

While alternatives of development are discussed in the Impact Statement, there is no statement concerning the management proposals necessary to implement these alternatives.

Indeed, development without management becomes self-destructive. Surely, the Environmental Impact Statement, under discussion this evening, is partly a result of development without adequate management.

Worthwhile discussions of the impact of development must necessarily include discussions of the impact of development without adequate management, and legal enforcement power.

Another reason for the preparation of the Impact Statement was concern regarding roads. Discussion concerning the impact of further road construction is inadequate. The proposed Skyline Road is controversial and Segment B has caused considerable concern.

In an area as arid as Southern Nevada, attention should be paid to water rights, water availability, protection and wise use of water resources.

While an area would appear to be an adequate camp area, water resource may preclude any development at all.

I am basically of the opinion that the Master Plan for Red Rock must be updated. Indeed, writing an impact statement on the 1968 Master Plan is incongruous. The Master Plan should be continuously updated in order to keep up with the changing attitudes and values.

While driving for pleasure was paramount in people's thoughts in 1968, obviously people's attitudes have changed. An example of this is the national parks for the future recommendation which is widely acclaimed and is presently on its way to implementation, that in-park automobile use be phased out and be replaced by other modes of transportation, and that off-road vehicle use in parks be prohibited.

I certainly recommend that this 1968 Master Plan be updated with public participation and be available for public comment, prior to adoption.

I would also recommend that sections of the plan receiving public opposition be modified or dropped. This Master Plan should be publicly reviewed every two years for updating and possible revision.

I further feel a program of ecological research should be undertaken for Red Rock in order to establish its carrying capacity, identify existing environmental values, and to provide an early warning system to identify potential adverse environmental effects. IV-8

These studies should serve as the basis for an annual systemwide environmental report which can also be a part of the continuing biennial Master Plan update.

Recreational use in Red Rock should be based on natural assets, not constructed facilities. The greatest effort should be made to offer an experience different in kind from standard urban or suburban recreational programs.

Interpretive programs should be directed to dramatize ecological relationships as they affect man and the entire eco-system. Program personnel should be especially trained for this task and regulations for the area should reinforce the environmental ethics in terms of waste disposal, the use of recreational resources, and the care of camping areas. IV-13

Interpretive programs should also reflect the cultural, historical and scientific diversity of the area. I would like to stress the changing attitudes towards the automobile. By referring to the national parks for the future recommendation one more time, this time calling for moratoriums on road-building, parking lots and other auto-oriented improvements until Master Plan updates are completed. IV-13

BLM development must be consistent with State Park policy. Every attempt must be made to coordinate and cooperate with the Nevada State Park System, to prevent adverse effects to the adjacent Nevada State Park Areas. IV-10

Red Rock is our heritage, our legacy, and a national treasure that can never be replaced. And I certainly think that with thoughtful stewardship, its values can multiply and be shared by all of us for a long time to come.

Thank you.

MR. BOYLES: Thank you.

That is all of the pre-registration slips that I have. Is there anyone in the room who wishes to speak at this time who is not registered?

Please state your name and who you represent.

MATT MC MACKIN: My name is Matt McMackin, and I'm here as a citizen.

I'd like to qualify myself before I start by saying that I work in a local camping store which caters to the people that use Red Rock, the day hikers, picnickers, people who are car camping, back-packing, or rock climbing.

And, everyday in the store when people come in and we talk to them, and the general attitude is that people don't want Red Rock developed further, but that want to protect it from the abuse that it's getting now rather than -- you know, the things that are happening like at First Creek, the trees are being chopped down, and Oak Creek and Willow Springs, are people carving their names in the rock; at Sandstone Quarry, and -- they just feel that rather than develop it further, that BLM should first find a way to protect what they have already developed.

MR. BOYLES: Thank you.

Is there anyone else?

JOE HERBST: My name is Joe Herbst, I am the caretaker at Mount Potosi. I'm just about always in the Red Rocks and I see them every day.

I've spent a great deal of time in Yosemite Valley, a little more time than I'd like to admit because it's kind of a perverse place these days. But, I spent a lot of time sitting around the fire and talking to other climbers there about what it must have been like in Yosemite Valley before there was smog and before the bears were perverted; and a lot of my climbing friends have been to the Red Rocks and they just can't believe how magical it is, that the wilderness isn't changed; it's there like it's supposed to be.

We have no idea what Yosemite Valley looked like, you know; the Indians used to burn down the trees, and the Park Service burns off the grass in the meadows, so there's no mosquitoes. And it's just incredible: Here we are at this time at this place, in time and space, where we're going to be able to have some say about what the Red Rocks are going to look like.

And a lot of us would have given anything to have been at that time and place in Yosemite Valley when we could have done something.

Thank you.

MR. BOYLES: Thank you.

Is there anyone else who wishes to speak? If not, I will remind you that the hearing record will remain open until April 25 for any individual who wishes to submit any additional comments or any individual who has not made an oral presentation tonight but who may wish to submit a written statement. And with that, I think we can adjourn.

Oh, I'm sorry.

ED MALONE: My name is Ed Malone and I'm from Hamilton, Montana.

I would like to make a few comments for a group of people that has not been represented here. I'm a trailerer; some people call it the snowbirds. And the difference in snowbirds, some are geeses and some are ducks. And the difference is the geese leave and they go right straight up in the snow, but the ducks, they kind of go along sideways.

Now, I'm not going to tell you how to run the business or make any recommendation about the Master Plan or anything like that. But the man that brought up about the campgrounds, that rung a bell to me.

Now, when I went to Death Valley, we went to Zion; and a person come from New York and he went to ask a ranger, he said, "I got an hour to see Zion. What do I look at?" And the ranger said, "Why don't you go on and drive on out?"

Now, when we went to Death Valley, we stayed a month; 26 days. And we saw everything that they had but the sliding rock. And you can't -- I can't see anything and I'm just strictly a looker. I can't see anything in 30 minutes. It takes me a week or two. I've been up here at Boulder Beach for three weeks today and enjoy every bit of it; and I have a self-contained trailer and don't pollute anything.

Now, we're self-sufficient, but we do need a place to camp to spot our trailer so we can see things. I'm like the woman that can't get around very good. I'm what you call a panter; step and pant. But I like to have a place where I can stay for two or three days or weeks.

We went around Red Canyon and I enjoyed it. There's lots of places like that. But I think that there should be campgrounds someplace so that people that travel and travel in trailers can stop for a few days and take a look at it.

Now, these other things, I think the sheep, and the springs like the little lad said, should be protected, because once the spring is gone, it's gone; and the same way with the sheep. But, of course, that's for you people to work out.

Now, I'm strictly against the State and the federal government being together. And I'll tell you, for this one instance, in Florida there's 120 acres that belonged to you and me, the rest of the people in the United States, and it's free; that's the Singing Tower, the ground that the Singing Tower is on, and to me, it's the most beautiful place in the United States. But the State of Florida put a road from the main road over to it and they charge you, like, 50 cents apiece to go in there.

Now, that's ridiculous; but that's the way a lot of the times it works.

Now, we are acquainted with the Bureau of Land Management of Alaska to Florida and New York and Washington, D.C. And one of the best places in the country is across from Virginia, that six, five hundred miles of Blue Ridge Mountain Trail, in the Smoky Mountains there. And south of Washington, D.C., 30 miles is three Forest Service Camps. I know; I've been in them.

And, I have never been in a camp, after they're developed that the garbage piled up. Not in no place at all. The National Park Service, the Forest Service and the Bureau of Land Management takes care of it and they police it. I've never found any trouble in any of them places; and then it would be, naturally, once it's developed and you've got your places there and the men are working it, why, it just depends on time.

Now, I just want to speak a little for the retired people, and we've only got four or five years, or ten years, whatever. But don't you think it's foolish for me to die of malnutrition with a hundred thousand dollars in the bank?

Now, God put these things on the earth for people to look at. And how am I going to do unless we can get at it? That's all I have to say.

MR. BOYLES: Thank you very much, Mr. Malone.

Ladies and gentlemen, your comments and statements tonight will be considered in the preparation of the final Impact Statement for the development of Red Rock Canyon Recreational Lands.

Notification for this Statement will be published in the Federal Register, and at that time we will make a public announcement of its availability.

Thank you.

(At 9:40 o'clock p.m., the
public meeting was concluded.)

* * * * *

REPORTER'S CERTIFICATE

STATE OF NEVADA)
ss
COUNTY OF CLARK)

I, WILLIAM E. MADARA, C.S.R., do hereby certify that I took down in stenotype all of the proceedings had in the before-entitled matter at the time and place indicated and that thereafter said stenotype notes were transcribed into typewriting at and under my direction and supervision; and that the foregoing transcript constitutes a full, true and accurate record of the proceedings had.

Dated at Las Vegas, Nevada, April 26, 1974.

WILLIAM E. MADARA, C.S.R.

MIKE O'CALLAGHAN
Governor

NEVADA

NEVADA
STATE
PARK
SYSTEM

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Chris H. Sheerin,
Vice Chairman

Ann L. Anderson
Thalia Dondero
Audrey Harris
Marie Ripps
Clifford C. Segerblom

April 11, 1974

Mr. E. I. Rowland
Bureau of Land Management
United States Dept. of Interior
Nevada State Office
Room 3008, Federal Building
300 Booth Street
Reno, Nevada 89502

Subject: Comments relative to the draft of the Environmental Statement for the Red Rock recreation lands.

Dear Mr. Rowland:

This statement represents the considered opinion of the Nevada State Park Advisory Commission. We wish to address ourselves to three major points:

1. The environmental statement does not address itself to the management of the Red Rock recreation lands. We feel that the management and the matter in which the management policies are established can significantly effect the quality of the environment and the human experience in the area. We feel greater attention to detail should be given to this item at this time.

The road system, which was the major concern brought out at the various meetings throughout the community, has been totally neglected in our opinion and not covered to any extent by the environmental statement. In fact, the statement more or less assumes that all road plans will continue as originally established. We feel that from the input that we have received from the general public that this is not satisfactory and that certain roads and the planned development should not be built, while others should be modified.

The human experience, the preservation of wildlife, and the continued health and growth of the plant colonies are dependent completely upon the natural water resources of the Red Rock recreation lands. The feasibility statement does not take into consideration or at least does not adequately state any alternate plans or in fact the impact of existing plans upon the water resources. We feel that this is a critical point and should receive considerable attention.

a division of the Department of Conservation and Natural Resources
Elmo J. DeRicco, Director

APPENDIX A

MIKE O'CALLAGHAN
Governor

NEVADA
STATE
PARK
SYSTEM

ERIC R. CRONKHITE
Administrator

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2. The State Parks System has been a partner in the development of the Master Plan and appropriately so. Any inadequacies in the Master Plan must in fact be shared by the State Parks System. Therefore, we feel that the Parks System will stand, ready and eager, to assist in updating the Master Plan. We feel quite strongly that this is necessary at this time and that the updating should in fact resolve many of the inadequacies mentioned in this statement.

3. The State of Nevada, now a major land holder in Red Rock Canyon will be most interested in coordinating the development of their areas with the major philospphy for development of the total complex. It has staff and funds ready to begin this task and the Nevada State Park Advisory Commission has taken the position that development, improvements, and policies promoted by the State on its lands in Red Rock be compatible with resource access and development. And that development, access, and management be coordinated in the best interest of the resources. We hope that this will assure that when a plan is completed and initiated that the total development for access to the area, human resources in the area, and management resources of the area are coordinated.

The State is already coordinating a program for the public at the Spring Mountain Ranch for the coming summer. The program will involve volunteer groups and the various recreation departments throughout the community. This program will be an interpretative program that should be both educational as well as an enrichment to the leisure experience of the participant. The people of southern Nevada are most anxious to be involved in programs of this type.

Very truly yours,

R. O. Forson

R. O. Forson, Chairman
Nevada State Park Advisory Comm.

ROF/dm

Assemblyman [illegible] 3511 [illegible] Way, L.V. 89109

April, 1974

REcommendations for Revision of the Red Rock Canyon Master Plan:

1. Add substantial portions of the area to a "wild" category through:
   a. elimination of the Crestline Scenic Drive from its beginning near White Rock Spring past Las Madre to the proposed Ramshead site.
   b. elimination of the proposed road in the Brownstone area from the vicinity of the reservoir east to the park boundary.

2. Re-order the priorities for allocation of water to:
   a. wildlife
   b. maintaining streamside vegetation
   c. human consumption
   d. irrigation
   e. flush toilets & showers
   f. livestock

APP. II-2A

3. Attempt to obtain, through BLM exchange, private lands at the entrance to Calico Basin and Red Rock Canyon now owned by Howard Hughes.

4. Add to the list of desirable recreation activities:
   a. Nature study
   b. Photography

II-53

5. Establish a policy & philosophy that no improvement of present roads or development of new roads will be done without concurrent proper preparation of the sites that receive the easier access and adequate management to supervise activities in the area.

6. Carefully analyze the best use of the Spring Mtn. Ranch giving consideration to the following:
   a. Maintenance & administration headquarters for the entire area
   b. Main house to be used as a conference cneter by organizations on a reservation-fee basis
   c. Outdoor education curriculum for school children (day use and/or overnight eventually) in cooperation with Clark Co. School District
   d. Trailhead for canyons north, west, and south of ranch
   e. Tours for public covering history, archeology, plant & animal life, etc. of the area.
   f. Picnic area

IV-10

7. Regarding roads on the Valley floor:
   a. Re-evaluation of the Loop "B" of the Red Rock Scenic Drive; a specific impact study needs to be made of the alternatives; I lean toward using the existing road from Willow Spring back to the paved road near the Interpretive Center; a spur to Icebox could be added later, if that site is developed.
   b. Utilize one entrance road off the Blue Diamond Loop for both Pine Creek and Oak Creek, using basically existing alignments. Prohibit use of all other unimproved trails to Oak Creek, First Creek, etc.
   c. Consider a primitive road for 4-wheel drive use from the Loop A Rd. or from Sandstone Quarry into Brownstone Canyon, stopping in vicinity of reservoir. Access to Brownstone would be by this one road; the east boundary of the park would be fenced to prohibit entrance.

APPENDIX "B"

8. I propose primitive campsites and an archeological interpretive trail in Boownstone.

9. Horseback riding limited to specific areas to be determined.

10. La Madre is ideally suited for group camping and should be planned for this purpose rather than Oak Creek.

11. Number of units indicated for all sites should be greatly re-evaluated in a site by site study of carrying capacity. Some should have primitive facilities only (no running water, concrete pads, etc.) Development should stop short of the canyons themselves with trails or trail markings provided for hiking into the canyons. No development near springs.

12. Clark County Commissioners should be urged to adopt and consistently enforce a special zoning and development policy for private lands within the Red Rock Area.

13. Construction of the Interpretive Center should be where presently proposed and accomplished as soon as possible so that the visitor is encouraged to go there first, to learn what is available and how to properly appreciate and enjoy it.

    A self-guiding nature trail might extend out a short distance from the Center. Many visitors to the area will be content to stop at the Visitor's Center and then drive on around the Blue Diamond Loop Rd.

14. Overnight camping is a desirable recreational activity to be planned for at carefully selected sites - some for families, others for group and/or organizational use. Also, primitive camping should be permitted in the back country, possibly utilizing a permit system to have knowledge as to who is in the area.

15. First Phase Development should include, if possible:
    Interpretive Center
    Sandstone Quarry
    La Madre
    Spring Mtn. Ranch
    Calico Hills Trail
    Loop "B" Road

    and, of course, the necessary monies for proper operations & maintenance and management for each area as it is developed.

April 16, 1974

Comments on the Draft Environmental Statement for the Red Rock Recreation Lands
prepared by Assemblyman Jean Ford, 3511 Pueblo Way, Las Vegas, Nevada 89109

The purpose of this hearing, as indicated by the BLM's information sheet, is to provide an opportunity for the public to make comments on the EIS, to provide a public forum for such comments, and to particularly to receive public input as to the level to which the Red Rock Canyon Recreation Lands should be developed.

In a sense, then, this is to be considered as a hearing on whether or not the Recreation Management Plan, adopted in 1968, is still adequate or whether, in the light of the environmental impacts discussed in the EIS, certain changes should be made.

It is my conclusion that substantial updating and revision of the Master Plan is necessary if it is to meet its own stated purpose: "...to provide a logical blueprint of effective recreation developments meeting the needs of the visitor and consistent with the capacity of the resource."

COMMENT ON THE PROPOSAL (Pages 1-13 of the EIS)

To begin with, it is impossible to get an adequate picture of the proposed action from reading this brief description in the EIS. It very sketchily covers only portions of the 1968 Recreation Management Plan so that it is necessary for one to constantly keep referring to the full copy of the Plan as the environmental impacts and alternatives are discussed.

The ideal would have been to have attached the complete Plan as an Appendix. The minimum additions to this portion of the EIS should include the following:

1. A listing of the purpose and objectives of the Plan as stated in the Introduction, giving the reader a feel for the overall philosophy the plan was to carry out. I-1
2. Pertaining to the chapter on Resource Management, include some discussion on resource protection (pg. 1-A) and the importance of acquisition of key private lands (pg. 4-A)
3. Regarding Visitor Management, 7 pages are condensed in 6 lines; there should be a full listing of the recreational activities to be encouraged or planned for (pg. 6-B) and a discussion of the management needs resulting from these activities.
4. The chapter on Administrative Management, with its discussion of staff requirements, organizational structure, and administrative facilities needed, is completely ignored in the EIS. A discussion of the level of management needed with each alternative (and the proposal itself) is one of the key elements lacking in the EIS.
5. Regarding General Development, the key statements on pg. 1-D regarding the development objectives, character of development, and the handling of development in phases is completely left out and all one finds in the EIS is a bare listing of new roads to be built. No wonder one gets the wrong impression on priorities. I-1
6. The reproduction of the same maps as used in the master plan, particularly the enlarged development area maps following pg. 9-E. The general development map used in the EIS on pg. 7 is not the same map as that in the Plan following pg. 4-D. The Red Rock Scenic Drive routes are not the same. The map in the EIS has added White Rock Spring and Lost Creek sites but left out the Brownstone Loop Road, etc.

7: The chart on pg. 8 of the EIS should include the #of units (picnic, camping,etc.) proposed in the Plan

The development schedule of sites on pg. 9-10 is not found in the final version of the Master Plan at all. From what source was this taken? I-7

There is no discussion of the importance of water in the Description of the Proposal nor any reflection of the philosophy in the Master Plan other than an indication in the chart on Pg. 8 of the EIS of water facilities at every site. For instance, the statement on pg. 3-A of the Plan listing the allocation of priorites for water (placing Human Consumption as #1) should have been quoted, as this in itself has great ramifications on the environmental impacts. II-20

COMMENTS ON DESCRIPTION OF THE ENVIRONMENT (pg. 13-79)

pg. 16 - Known surface water flows from existing springs should be listed as on pg. 4-F of the Plan (or more recent information if available). Notice should be made of the State of Nevada's acquisition of all the water rights belong to the Spring Mtn. Ranch. The following statement in the Plan on pg. 5-F should be quoted: "...The surface water forms the basis for a unique ecological community...If this water is siphoned off for recreation purposes, one of the very important recreation attractions will be gone. There is an urgent need to explore the underground water potential of the Red Rock area so that this source can be used for recreation purposes..." II-20

pg. 30 - the natural arch on Bridge Mtn. isn't mentioned. The discussion of the caves is inadequate; should reflect that at least one major cave has been discovered since the Plan was formulated. II-10

pg. 39 - update to reflect change in standards set by State Board of Health and report on the activities of the Sewage and Waste Water Advisory Committee to the Co. Commission. The Clark Co.Health Dept. should be asked to review the EIS and comment regarding their septic tank policy. II-52

pg. 48 - explain"recent action to close the back area roads": when was action taken, which roads, and has it been successful, is it still in effect?

pg. 49-50 - again reflect purchase of Spring Mtn. Ranch by State and the accompanying water and grazing rights. Indicate if there are still other grazing rights in the area in good standing. II-37

pg. 61 - report on withdrawal of zoning requests by Fletcher-Jones after large public protest and subsequent purchase of ranch by State Park System. II-52

pg. 70 - there should be a full discussion here of the State of Nevada's interest and involvment over the last 10 years I-12

pg. 71-72 - reflect the recent adoption by the County of a new zoning category of "Open Space" which is even more restrictive on development than Rural Open Land. There should also be a discussion of requests through the past several years to get the county to do a special study to consider special zoning for the private lands within the Red Rock area and a statement of development policy by the County so that private landowners would know where they stand. A recognition should be made that what happens to private lands will greatly affect the area. II-60

pg. 73 - I agree with the report that outdoor recreation sites can be of economic value to the area, if properly developed and managed. See "Business Opportunities in Southern Nevada" prepared by A.D. Little & Co. in June, 1970.

pg. 74-75 - should discuss the great potential impact from outdoor recreationists of southern California unable to use their own public lands as they wish because of the California Desert Proposal and more strict management by BLM. We should be prepared by properly manage these visitors and steer them to the variety of opportunities that exist in Southern Nevada. IX-13

pg. 79-80 - again reflect the State's ownership of the water rights connected with the Spring Mtn. ranch and indicate how many other private water rights exist in the area. II-20

COMMENTS ON ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION (pg. 79-99)

PG. 86 - discussion of the big horn sheep should include recognition of the Desert National Wildlife Range and its role in bighorn sheep protection. The rationale behind removing the Spring Mtn. unit from the Wildlife Range in the mid-60's should be discussed. I-11

pg. 95 - The paragraph on Planning inaccurately indicates that development at Red Rock would be reviewed by the Regional Planning Council. It acts as a clearinghouse only where applications for federal funds by local agencies is involved. It has no review power or veto power over planning actions taken by the County Commission regarding lands in the unincorporated area. II-60

COMMENTS ON MITIGATING MEASURES (pg. 99-114)

pg. 109 - I don't understand the statement "development proposed at La Madre Canyon would utilize existing openings as much as possible." What do you mean by openings?

pg. 112 - see earlier reference to open space zoning (comment on pg. 71-72) and extensive battles in past years over development proposals.

COMMENTS ON ALTERNATIVES TO THE PROPOSED ACTION (pg. 123-177)

pg. 123 - I object to the term "full" development for any alternative since this implies picnic tables or something similar at every conceivable site. This is very misleading, since even the current Master Plan leaves a number of areas, such as First Creek, Brownstone, with no development. Perhaps the word "moderate" would serve better.

pg. 124 - chart - the statement at the bottom of the page on Levels of Management is entirely inadequate to cover the subject as needed. Alternatives V and VI are management alternatives and shouldn't be listed as though they could be compared with development alternatives. It's as if comparing apples and oranges. They should be looked at side by side, such as pairing Development Alternative II with Management Alternative V. Another management alternative that should be given equal consideration is that of the amount of water facilities needed or desirable at each particular sites. When the hearings were held on the Master Plan in 1968, many citizens spoke in favor of a number of primitive picnic or camping sites where one would carry his own water. The alternative of "less than fully developed water facilities" should be considered for at least some sites.

Certainly it is inaccurate to reflect in the chart that development of each site on the chart except the Dude Ranch is required to implement Alt. V and VI.

pg. 125 - The decision to collectively refer to Lost Creek, Ice Box, Rocky Gap, and La Madre areas as La Madre & Red Rock Canyons is very poor and only leads to great confusion on the part of one attempting to understand the EIS. First of all, no one familiar with the area is used to this terminology and it makes the chart on pg. 124 that much harder to understand. At first glance it implies that Lost Creek, etc. would not be developed at all under Alt. I - IV. Secondly, there is very little in common between La Madre and the other sites you have lumped it with, and they should be considered all separately.

pg. 126 - map - This and maps for Alt. II and III assume that the proposed Loop B of the Red Rock Scenic Drive will be built as proposed earlier. I am appalled to see that the most controversial aspect of the present Proposal or Master Plan, the road system on the valley floor, is not evaluated in this EIS. I attach a letter received by me in July, 1972 for the Director's Office of the BLM, stating that the environmental statement will describe the various routes that may be used to complete the loop road and the effects upon the environment that will result from the construction of each segment. This, clearly, has not been done and must be done in the final draft.

Also, there is no discussion in any of the alternatives as to what happens to the Red Rock summit road without the construction of the Crestline Drive. The congestion through Rocky Gap is mentioned several times, but no where does it go into whether or not vehicles, off-road or otherwise, would be allowed to travel the whole route, only go to a trailhead at the summit, or be prohibited beyond the gate to La Madre. None of these road alternatives are discussed at all. In fact, the Summit Road does not even show on any of the maps coming down into Lovell Canyon and connecting out to the Pahrump Hwy.

pg. 130 - I disagree strongly that the elimination of the Crestline Drive would greatly hamper the area's ability to satisfy the demand for driving for pleasure. There would still be sufficient opportunities through use of the Blue Diamond Loop, the lower Red Rock Scenic Drive, and some designated primitive roads such as into Brownstone. To give any kind of priority to providing several alternatives for tour busses is uncalled for.

pg. 131 - 132 - Any road to Ramshead should not drive right up to an overlook but should stop at least 1/2 mile short and require a walk to the view.

pg. 132 - The statement is made: "The primitive character of the area would be difficult to maintain." Compared to the proposed action of a paved scenic drive right through the area? You must be kidding!

pg. 134 - I question the whole rationale used here and in subsequent comments that you can consider adverse effects from less dollars being contributed economically to the Las Vegas area's recreation & construction industry. The adverse effects to the environment being studied - to the resource itself-should be the prime factor under consideration, attempting to reach a balance between preservation and providing the public opportunities to enjoy that which is being preserved.

pg. 138 - the discussion of the impact of Alt. II on water appears to be of a positive benefit-nature, yet in the chart on pg. 147 it indicates "slightly adverse." Nothing in the narrative carries this out.

pg. 141 - Again, I highly question the rationale that the impact would be "highly adverse" on recreation because we reduce the "driving for pleasure" opportunity. Theee are other kinds of recreation to be considered, as other portions of the EIS indicate.

pg. 143 - "the primitive area would be used to death" is a very poor statement when you are comparing this "limited development" to that of a paved scenic drive. This is also in direct conflict with the statement earlier that there would be adverse impact upon recreation because of a pattern shift in visitor use.

pg. 155-56 - this assumes that the "primitive above" alternative ends in highly adverse impact and much greater management controls than other alternatives. I disagree. The extensive discussion of management restrictions on pg. 156 is equally applicable to all development alternatives because you will always have more people wanting to use the existing facilities than you have room for, and some will want to use the area in unacceptable ways regardless of the level of development. Any discussion of restrictions or people management should include the possibility of user fees. I don't see this mentioned anywhere.

pg. 157 - The statement "Major management efforts would have to be concentrated in the area east of the escarpment leaving the upper area much to the public's own discretion" is very poor. Good management would not leave any area solely to the public's own discretion. If management is needed in any area to properly control people and preserve the resource, it should be provided.

I agree that there is not sufficient justification for the area to be considered primarily as a primitive area. I greatly support the wilderness proposals for Lake Mead, Desert Game Range, and Death Valley, but feel recreation should have a balanced priority with resource preservation at Red Rock.

pg. 162 - I agree that great adverse impacts would result from Alt. IV, both in recreation needs not being met and in destruction of the resource.

pg. 163 - map - needs to show existing roads through valley floor (into Pine Creek, Oak Creek, First Creek,) and over summit into Lovell Canyon

pg. 166 - again, this assumes that the controls and restrictions suggested as necessary for this alternative would not be applicable to present Proposal or Alt. I. I disagree strongly.

pg. 168 - I disagree strongly that "a regional type park left only in an open space category would contribute little to the community needs." I certainly support more development than is presently in the area, but I do know that thousands of Nevadans get much enjoyment out of Red Rock Canyon as it now exists and would continue to do so.

pg. 173 - you recognize that this is a management alternative rather than a development scheme and can be applied to each of the development alternatives. See Comment on pg. 124

I feel this "day use only" alternative should be evaluated in relation to each specific site studied for development, but some overnight camping should be allowed, possibly through a permit system at selected sites.

pg. 175 - Whether or not the area should eventually be managed by another agency is quite another question and not really the subject of this EIS. "Holding the area as is" is similar to Alt. IV which I feel has serious adverse impacts. The EIS should go into some detail here regarding the State Park System-BLM cooperative agreement, the passage of AJR 9 at the 1973 Legislative Session of the Nevada Legislature, and the pending bills in Congress which would transfer lands in Red Rock to the State of Nevada.

Any consideration of a change in management should include a requirement that the new management follow certain guidelines in philosophy of development and management that meet the overall purpose of providing recreational opportunities in balance with resource preservation.

Comments on Consultation with Others (pg. 177-216)

pg. 177 - In addition to Dennis Hess replacing Euel Davis, I believe that Baine Cater replaced Newell MOrgan, and a fifth member of the committee was Virlis Fischer, representing user groups. These names are all on the letter of transmittal to State Director J.R. Penny of the Spring Mtn. Planning Unit Subcommittee report of 1965, which was the culmination of this group's efforts. IX-1

pg. 184 -85 - I still support all of these comments prepared when I was a member of the State Park Advisory Commission. They are all still pertinent.

pg. 187 - I still stand by my comments with the exception that:
- a. development of Calico Basin should preferably be by whatever agency manages the entire area; county management should be a last resort.
- b. the question of roadside stops along the Crestline Rd. is only applicable if the road were built; I greatly oppose this and state so in other remarks on pg. 204.

pg. 204 - I still stand on my remarks. The biggest question still unanswered is the one I raised: "What are the optimum number of recreation facilities compatible with capacity of resource?" Then the more specific question is what type of development, if any, is compatible with each proposed site. Somehow, I thought, this was what the EIS was to be all about and I was sadly mistaken. But these questions must be answered before determination of level of development and management can be made.

Items that should be added to this portion of EIS include:

Letter of June 1, 1972 from Nevada Open Spaces Council to Dennis Hess which precipitated the June 22 public meeting and subsequent mandate for EIS IX-8

Environmental Assessment prepared by District BLM office on proposed Loop "B" and campground development in 1972.

Copy of AJR 9 passed by the Nevada Legislature, 1973.

CONCLUSION

I have worked for over 10 years for the preservation of Red Rock Canyon so that it can be forever enjoyed by the residents and visitors of southern Nevada. I believe it is possible to achieve a balance between meeting recreation needs and preserving the resource.

The alternative in the EIS that comes closest to my views is Alternative I, though I cannot buy the term "full" development. However, I would develop, eventually, a large number of sites, each designed to its own carrying capacity for a specific type of recreational opportunity compatible with its unique features. Existing roads would never be improved or new ones added without adequate management occuring at the same time. Water facilities would be sparingly planned for. Many areas would have primitive develppment only. User fees, reservations, other controls are inevitable. I would start with only a few key sites; implementation of the Plan should take 20 years or longer. I look forward to working with the BLM, State Park System, and all interested groups & individuals in the much-needed updating of the Master Plan, and then for its implementation in the best interests of

IN REPLY REFER TO:
6151 (370)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

JUL 11 1972

Ms. Jean Ford
3511 Pueblo Way
Las Vegas, Nevada 89109

Dear Ms. Ford:

Director Silcock has asked us to reply to your letter of June 26 concerning the development of the Red Rocks Recreation Lands.

This subject has received considerable attention as a result of the public meeting held on June 22. In response to numerous requests, State Director, Rowland has deferred all construction activities until an environmental statement has been prepared. The environmental statement describe the various routes that may be used to complete the loop road and the effects upon the environment that will result from the construction of each segment.

Before a final route selection is made, the environmental statement will be given public exposure so that interested people can have an opportunity to express their views on the subject. We believe that this approach will lead to the most acceptable route for Segment B.

As to your comment on construction funds, we generally agree with your suggestion. Barring some unforeseen emergency which would require a shift in program emphasis elsewhere, we plan to retain the funds allocated for this project in Nevada.

The $35,000 increase that you mentioned has not as yet been approved. If it becomes a reality, it will finance additional protection for the Red Rocks area at a time when visitation is building up at a rapid rate.

It is a pleasure to hear from you and learn that your keen interest in the development of our natural resources. Please let us know if we can be of further assistance.

Sincerely yours,

Eldon F Holmes

Chief, Division of Recreation

It was nice to hear from you —
Thanks. Bill Holmes

SPECIES OF BIRDS IN THE RED ROCK AREA

4-16-76

Turkey Vulture
Sharp-shinned Hawk
Cooper's Hawk
Red-tailed Hawk
Golden Eagle
Prairie Falcon
American Kestrel
Gambel's Quail
Band-tailed Pigeon
Mourning Dove
Screech Owl
Great-horned Owl
Long-eared Owl
Poor-will
Common Nighthawk
Lesser Nighthawk
White-throated Swift
Black-chinned Hummingbird
Costa's Hummingbird
Broad-tailed Hummingbird
Northern Flicker
Yellow-bellied Sapsucker
Hairy Woodpecker
Ladder-backed Woodpecker
Western Kingbird
Cassin's Kingbird
Wied's-crested Flycatcher
Ash-throated Flycatcher
Say's Phoebe
Traill's Flycatcher
Hammond's Flycatcher
Dusky Flycatcher
Gray Flycatcher
Western Flycatcher
Horned Lark
Western Wood Pewee
Olive-sided Flycatcher
Violet-green Swallow
[illegible] Swallow
Pinon Jay
Scrub Jay
Clark's Nutcracker
Common Raven
Plain Titmouse
Bushtit
House Wren
Bewick's Wren
Cactus Wren
Canyon Wren
Rock Wren
Mockingbird
Bendire's Thrasher
Curve-billed Thrasher local
Leconte's Thrasher AR
Crissal Thrasher
Sage Thrasher
American Robin
Mountain Bluebird
Western Bluebird
Townsend's Solitaire
Blue-gray Gnatcatcher

Ruby-crowned Kinglet
Phainopepla
Loggerhead Shrike
Gray Vireo
Solitary Vireo
Warbling Vireo
Orange-crowned Warbler
Nashville Warbler
Yellow Warbler
Yellow-rumped Warbler FCSR (P)
Black-throated Gray Warbler
Grace's Warbler
Townsend's Warbler
Mac Gillvray's Warbler
Wilson's Warbler
House Sparrow
Western Meadowlark
Hooded Oriole Ac
Scott's Oriole
Northern Oriole
Brown-headed Cowbird
Western Tanager
Blak-headed Grosbeak
Blue Grosbeak
Indigo Bunting
Lazuli Bunting
Evening Grosbeak
House Finch
Pine Siskin
American Goldfinch
Lesser Goldfinch
Lawrence's Goldfinch
Green-tailed Towhee
Rufous-sided Towhee - Un WR(DR) FCSR(JP)
Lark Sparrow
Black-throated Sparrow
Sage Sparrow
Dark-eyed Junco FC(FP)
Chipping Sparrow
Brewer's Sparrow
Black-chinned Sparrow
White-crowned Sparrow
Song Sparrow

Cardinal Ac

APP. III

M. Vincent Mowbray
4316 Fortune Ave
LV 89107

Appendix C

[illegible] PUBLIC LANDS TASK FORCE
[illegible] ASSOCIATION, INC.
[illegible]
[illegible] 89701

P. O. BOX 1245
CARSON CITY, NEVADA 89701

March 18, 1974

Mr. E. I. Rowland
State Director
U.S. Bureau of Land Management
Room 3008, Federal Bldg.
300 Booth Street
Reno, Nevada 89502

Re: Red Rock Canyon NEPA draft
Environmental Impact Statement

Dear Mr. Rowland:

Firstly, this organization desires to point out a serious omission in the draft statement's chronology of activities (page 177) of "individuals and groups" involved in the formulation of BLM plans for the Red Rock Canyon Recreation Lands. This organization was the first citizen organization to submit a report to the BLM recommending preservation and recreational management of the Red Rock Canyon area. Enclosed is a copy of that first citizen report, somewhat revised, which was presented to then State BLM Director, J. Russell Penny, in April 3, 1964—by a "Nevada Survey" delegation composed of Carola Hutcherson, George Kell and Charles S. Watson, Jr. In 1965, I retrieved the Red Rock Canyon study and personally turned over the original copy to then BLM chief of recreation Eldon F. Holmes. We retained a copy for our records—from which the enclosed was reproduced. The original NORA Red Rock Canyon study was used extensively by Mr. Holmes and his staff in preparing plans for the bureau's Red Rock Canyon Recreation Lands proposal(which was brought to fruition on October 29, 1967). IX-1

In the interests of maintaining a true record of our initial involvement in the creation of the BLM's Red Rock Canyon Recreation Lands program, this organization stresses the need to amend page 177 of the draft impact statement—to show the April 3, 1964 presentation of the NORA Red Rock Canyon study to Mr. J. Russell Penny and the subsequent presentation to Mr. Eldon F. Holmes in March, 1965.

Concerning the draft statement's recommendations—this organization strenuously opposes the designation of certain lands as "open space" on the "Map No. 2"in areas recognized as BOR Class V(primitive area) in our 1964 report. NORA also opposes the proposed Red Rock Canyon "Scenic Drive" and "Skyline Drive" proposals as shown on "Map No. 3" of the draft statement. It should be noted that such "open space" criteria was notoriously used by the National Park Service (which resulted in serious criticism by the Conservation Foundation in 1971) for eventual roads and other eyesore intrusions into defacto wilderness areas.

Hearing Appendix D

NORA's objection to "open space" designations on "Map No. 2" are directed primarily to where it falls within the proposed La Madre Primitive Area(see map, in addenda of report) and in the high Sandstone Cliffs country, labelled on our NORA report's map as, "Red Rock Canyon Primitive Area". NORA does not object to the "open space" designations on the valley floor, where the designation co-incides with BOR Class III(Natural Environment Area) designations on the NORA report's map.

This organization would prefer Alternative II of the BLM's draft NEPA statement....with the lone exception of elimination of the proposed road(re: "Map No. 14") from Point 10(Ramshead Guard Station) to Point 8(Rams Head). This organization cannot endorse Alternative II as long as this road recommendation remains a part of it. If deleted, this organisation would have no reservation recommending Alternative II as the best environment planning solution to Red Rock Canyon's long term management. NORA urges, therefore, a further refinement to Alternative II, minus the Point 10-8 road, and/or the insertion of an additional Alternative reflecting this point of view.

NORA agrees with the BLM's premise that Alternative IV would prove unrealistic in terms of meeting visitor use pressure in the area ....although desireable in preserving the maximum primeval area in Red Rock Canyon. Alternatives III and I would invite an inordinate amount of "mass-use recreation" in areas too fragile, in terms of rare and endangered flora, fauna and critical archeological sites, for such uses. Alternative II, however, recommends excessive overnight use in the main Red Rock Canyon area—which should be scaled down to "day-use" only facilities, as it is at the present time. NORA also believes careful management procedures should be instituted to preserve the outstanding scenic character of the colorful Calico Hills area.

NORA strenuously opposes the "Brownstone Loop" road, as shown on Alternatives I and III—on the grounds it would be a prime threat to unique wilderness values and clearly debilitating to unique archeological phenomenon in the region north and northeast of the Calico Hills. We have little doubt that the state of Nevada will develop several areas, on lands recently purchased(early 1974), for mass use recreation. The BLM, therefore, should concentrate on maintaining the pristine character of those public lands remaining in the BLM's Red Rock Canyon Recreation Lands program. Needless to say, NORA is vigorously opposed to the transfer of any of these public lands to the state of Nevada....especially, when the state has declared its intention to honor the provisos of Senate Joint Resolution #6, passed by the 1961 Legislature, which "memorializes against the establishment of wilderness, primitive areas, natural areas and wild rivers in Nevada." As long as Nevada considers this resolution valid in state planning, public lands having prime wilderness values cannot be transferred to the tender mercies of such an anti-environmental policy.

Respectfully submitted,

Charles S. Watson Jr

Charles S. Watson, Jr.
Director

NATIONAL PUBLIC LANDS TASK FORCE

NEVADA OUTDOOR RECREATION ASSOCIATION, INC.

RED ROCK CANYON—A NATURAL LANDMARK STUDY

CLARK COUNTY, NEVADA.

By: The Nevada Survey - Southern Section,
Armin Lehr, Howard Booth, Dudley Zoller
and Virlise Fischer, Chas. S. Watson, Jr.

PREPARED BY THE NEVADA SURVEY, CHAS. S. WATSON, JR., DIRECTOR, AT THE REQUEST OF THE TOIYABE CHAPTER CONSERVATION COMMITTEE, DR. RICHARD C. SILL, CHAIRMAN.

LANDS INVOLVED: 64,000 acres M/L (both public domain & private lands).

T. 20 S., R. 59 E., M.D.B. & M.
sec. 7 and 18 all
T. 20 S., R. 58 E., M.D.B. & M.
sec. 11 (all), 12 (all), 13(all), 14(all), 15(E 1/2NE 1/2, S 1/2), 16(E 1/2SW 1/4, SE 1/4), 19 (S 1/2), 20 (S 1/2, S 1/2N 1/2,N 1/2 NE 1/4), 21(all), 22(all), 23(all), 24(all), 25(all), 26(all), 27(all),28(all), 29(all), 30(all), 31(all), 32(all), 33(all), 34(all), 35(all) and 36(all).
T. 21 S., R. 59 E., M.D.B. & M.
sec. 6(W 1/2 W 1/2), 7(W 1/2 W 1/2, NE 1/4 NW 1/4)
T. 21 S., R. 58 E., M.D.B. & M.
All of secs. 1 thru 23,24(W 1/2, W 1/2 E 1/2), 25 (W 1/2, W 1/2 E 1/2), 26 (all), 27 (all), 28(all), 29(all), 30(all), 31(all), 32(all), 33(all), 34(N 1/2, SW 1/4, N 1/2 SE1/4), 35 (N 1/2, SE 1/4) and 36 (W 1/2, W 1/2 E 1/2).
T. 21 S., R. 57 E., M.D.B. & M.
Sec. 1(all), 11(all), 12(all), 13(all), 14(all), 15(S 1/2 SE 1/4), 22(NW 1/4, E 1/2), 23(all), 24(all), 25(all), 26(all), 27(E 1/2), 34(E 1/2), 35(all), 36(all).
T. 22 S., R. 58 E., M.D.B. & M.
sec. 3(N 1/2 NW 1/4, SW 1/4 NW 1/4), 4(all), 5(all), 6(all), 7(all), 8(all), 9(all), 10(all), 11(all), 14(all), 15(all), 16(all), 17(all), 18(all), 19(NW 1/4, port. no. of highway), 20(E 1/2), 21(all), 22(all), 23(all), 26(all, no. of highway), 27(all, no. of highway), 28(all, no. of highway) and 29(NE 1/4, no. of highway).
T. 22 S., R. 57 E., M.D.B. & M.
sec. 1(all), 2(all), 3(E 1/2), 10(E 1/2), 11(all), 12(all), 13(all), 14(all), 15(E 1/2), 22(E 1/2, no. of highway), 23(all, no. of highway), and 24(NE 1/4, no. of highway).

PRIVATE LANDS THAT SHOULD BE EXCHANGED OR ACQUIRED.:

T.21 S., R.58 E.,sec.16:SE 1/4 NW 1/4, SW 1/4 NE 1/4. (80 acres).
T.21 S., R.58 E.,sec.6(NE 1/4 NE 1/4) (40 acres), sec.4([illegible] 1/4 NW 1/4) (40 acres).
T.21 S., R.59 E.,sec.6(W 1/2 W 1/2) and 7(W 1/2 W 1/2) ([illegible] acres).
T.20 S., R.58 E., sec. 29(E 1/2 SE 1/4), 32 (NE 1/4 NE 1/4) (120 acres).

REPORT ON THE SANDSTONE BLUFFS AREA
CLARK COUNTY, NEVADA
AND RECOMMENDATIONS FOR ITS PROTECTION

1. Introduction
2. General Description
3. Roads and Access
4. Main Points of Interest
5. Geology
6. Animal and Plant Life
7. Archeology
8. Recommendations:
    a. Boundaries
    b. Hiking trails
    c. Road Improvement
    d. Facilities
    e. Management
    f. Proposed jurisdiction

REPORT ON THE SANDSTONE BLUFFS AREA

AND RECOMMENDATIONS FOR ITS PROTECTION

1. Introduction

The Las Vegas Valley is rimmed on its western edge by the Spring Mt. Range, an isolated ridge whose higher canyons of refreshing alpine character are a playground for the people of Southern Nevada. The core of the range is Charleston Peak at almost 12,000 feet elevation, its middle and upper slopes timbered with stands of white fir, yellow pine and bristlecone pine; and its lower slopes and lesser peaks extensively clothed with juniper and pinon forests. From Charleston Peak the crest of the range lowers in an irregular manner for some 25 miles either way along a gentle arc which is convex towards the northeast. The southernmost portion of the range, that which is oriented north-northwest by south-southeast, is anchored at its southern tip by Mt. Potosi, elevation about 8,500 feet.

Just north from Mt. Potosi for some 14 miles the Spring Mt. Ridge averages only about 7,000 feet in elevation, yet its slopes, foothills and desert approaches form a unit of majestic proportions. Here nature has fashioned out of colorful sandstone an escarpment on a grand scale. She has endowed it and its environment with superb beauty and has left us a melange of biological, geological and micro-climatological assets. Even man, for once, has been unusually cooperative. First, he has left us an anthropological legacy hidden amongst the archives of rocky recesses; and second, he has so far, whether by accident or design, approached the area with a careful tread, leaving its integrity relatively intact. All this has been done within sight of a rapidly growing metropolitan area, whose people are becoming increasingly aware of the area's aesthetic and recreational potential. With the realization that urban pressures here will soon destroy much that is of priceless value unless protection is afforded, it is proposed that the Sandstone Bluffs and their envirorons as outlined in this report be protected and administered in a fashion to ensure the perpetuation of its esthetic, physical, and educational values for present and future generations.

2. General Description

A high circling hawk might best catch the splendor of the Sandstone Bluff country. He would see a long limestone ridge bearing northward from Potosi, its summit rising and falling in shallow undulations, and forested on relatively gentle western slopes and top alike in pinon and juniper. But the eastern slope would demand his attention. Several hundred feet below the ridge line the grey limestone gives way in precise fashion to nearly bare but colorful sandstone of radically different character. Long and sometimes narrow fingers of this material extend outward from the main ridge, usually widening and growing in height, until at one to one and a half miles outward they form great flattened or rounded peaks in their own right. The canyons between the great buttresses have steep slopes, often dropping sheer for hundreds and even a thousand feet, to narrow, boulder-choked bottoms quite frequently hidden in deep shadows. These great moats have their origins against the limestone ridge, are often bifurcated along their length, and contain numerous short side channels that cleave the walls and whose exits are left hanging at every conceivable height above the floors of the main canyons. The buttresses themselves terminate east of the main ridge, each at about the same distance, presenting their collective faces in a mighty palisade of spectacular proportions, and fall away for some two thousand feet to the desert floor below. The sandstone upland has great beauty of form, a singular spathaceousness, great warmth of color. "Beehives", deep trenches in solid stone, arches, rounded "potholes", majestic domes, and even a natural bridge adorn the summits. Against opposite walls of the incised canyons are streaks and tapestries of vivid reds and dark maroons against the lighter, more extensive tones of buff. Water slicks have darkened the cliff faces below each hanging gulch, and lichens of green and orange further diversify the coloring where conditions for growth are right.

About 13 miles north from Mt. Potosi, the limestone ridge to which the great sandstone bluffs are attached begins to decrease in height and turns slightly eastward, and within about four miles lowers to the desert floor. Here the sandstone outcrop temporarily terminates. Concurrently, about a mile west from the limestone ridge, another similar rock formation has been growing in stature until, in point of height, it has gained the ascendency. Whereas the more easterly of the ridges has lost in stature, the more westerly one has acquired considerable dramatic appeal. Its gently sloping western side rises to a magnificent crest from which it breaks nearly sheer on the eastern side to the talus slopes 1,000 or 1,500 feet below. At the same time it too, bears eastward in a great arc of some 10 miles length, paralleling its neighbor to the east, but continuing beyond until the summit of the palisade lies nearly orthogonal to the general northerly trend of the range. This great, grey cliff of limestone is La Madre Mt., which might be said to form a wall beyond which the sandstone does not penetrate.

Between the two limestone ridges as they bear northeastward, a canyon falls away from a 6,500 feet high pass over the western summit. After 4 miles of steep descent it turns ninety degrees and cuts southeastward to bisect the remnant of the eastern ridge, and discharges on to the desert. On USGS topographic maps this great trench is known as Red Rock Canyon and the pass at its head is called Red Rock Summit. It forms a rough but spectacular route of passage between the two sides of the range. The La Madre Cliff is unbroken along its length, but from the still steep slopes at the cliff base outcrops of limestone rise southward as minor features of considerable interest in their own right. The most westerly of these is named Turtlehead, and tops out at 6,300 feet elevation, only to fall away in a steep cliff in the manner of La Madre itself. About its base, emerging as low ridges above the general outwash plain, are exciting outcrops of the most colorful sandstone to be seen in the Red Rock complex. Rocks of buff and vivid red sandstone and grey limestone are interlayered, and cut through by several minor canyons that allow relatively easy access to pockets of considerable charm. To many people, this flamboyant outcrop has become known as Red Rock Canyon possibly as a result of ready access into its main feature, a sandstone rimmed basin just north from county road 85 out of Las Vegas. A preferrable name, perhaps, would be "Calico Basin" to avoid its being confused with the topographic feature labeled as Red Rock Canyon on the maps.

The big view of the Sandstone Bluff country east from the bluffs themselves would show several additional minor features, principally small ridges oriented north-northwest by south-southeast to conform to the main crest of the range. Like the main ridges these have gentle western slopes and break sharply along their eastern faces, and have relatively broad but shallow desert valleys between them. The largest of these is Blue Diamond Hill about 1500 feet above the desert whose crest continues in more neutral tones southward from the red outcrops of the Calico Basin. The desert valley formed between the great Sandstone Bluffs and the line of Red Rock Basin and Blue Diamond Hill has great attraction for its diversity of desert vegetation. Equally important, however, it provides the spateous foreground to accentuate the drama of bright colors and high bluffs that rise abruptly from the western and northern edges. In the long run, Blue Diamond Hill may serve its most useful function in providing scenic unity to the Sandstone Bluff complex, a natural barrier against urban development from the east.

The most spectacular approach to the Sandstone Bluff area is also the easiest--directly west from the city of Las Vegas. Indeed, the great fortress buttes and intervening canyons, the mighty palisade of La Madre, and the splash of bright color that is the Calico Basin are impressively viewed even from the city. La Madre interjects its 8,000 feet crest between the city and the main peaks of the Spring Mountains. Its proximity, sheer cliffs, and saw-toothed summit force attention upon itself at the expense of the main crest, which is distantly visible farther to the west. As one drives toward the bluffs, he is confronted first by the line of Blue Diamond Hill and Calico Basin, which shield from view the lower half of the great palisade. The real view begins upon approaching the gap between these two landmarks. Immediately to the north looms Turtlehead Peak with the flamboyant sandstone outcrops of Calico Basin at its base. Westward through the gap the vegetation becomes more interesting--Joshua trees and yucca, cholla and various other cactus become more numerous. The road wanders a bit through this garden, and then the wide panorama of imposing bluffs is suddenly in full view. North and south across the line of vision for better than 12 miles runs this great serrated face, its domed and cusped summits towering 2,000 to 3,000 feet immediately above the desert floor.

The great palisade is not unbroken, but rather is incised by the several very narrow canyons that often exit at desert level, and whose walls rise nearly sheer in the fashion of the main front. Thus the appearance as a whole is that of a row of bold battlements, turreted fortresses narrowly separated by shadowed moats. Most exalted of the buttes is Willson Peak, over 7,000 feet above sea level. a squared-off monolith whose silhouette is precisely defined against the soft light of the western sky at dusk. Yet, Willson is only the central figure among many quarried in the same grand style, each stamped with individual majesty that has been sculptured out of time by erosion. Each grand buttress is chiseled with fine detail--fluted walls, domed and cusped summits, mittered caves, and additional wealth of fine architectural effect.

It is not form alone that excites the senses. Color heightens all the effects. The dominant shade is the light buff through which runs a broad, horizontal, maroon band several hundred feet in thickness, and strikingly evident even from Las Vegas. Other colored strata of lesser thickness are evident on closer inspection, all forming horizontal bands that cut with precision for miles across buttress and moat alike. The slanting rays of the late afternoon and evening accent all these features. The canyons are thrown into deep gloom, long shadows strike far out across a "softened" desert, vertical flutes and column are cast in sharp relief, and those features still in sunlight take on a warmth of tone that has its climax in the alpenglow of sunset.

3. Roads and Access

The Sandstone Bluff area is fortunate in having the necessary basic road system already in existence. It provides access on the east, south, west and through the heart of the complex.

1. Charleston Boulevard (Route 85) - Charleston and Sahara Boulevards become light duty gravel roads near the edge of town and shortly thereafter merge to become Route 85. This is the main access route to the Bluff country. It extends nearly due west through excellent desert country of the Lower Sonoran life zone to Calico Basin, a distance of about ten miles. Three short spur roads lead to attractive spots on the east, center and west of this sandstone outcrop; but only the center one is well maintained at present. From Red Rock Basin the route passes through the gap between the basin and Blue Diamond Hill and thence turns southward between the Bluffs and the hill to the mining town of Blue Diamond where blacktop begins. Here the road exits from the Bluff country. This section of the road presents very interesting botanical displays of the Lower Sonoran life zone and unparalleled views of the face of the bluffs. Short spur roads or jeep trails approach the mouths of most of the interesting canyons, the distance from Las Vegas to Blue Diamond by this route is about 18 miles.

2. State Route 16 to Blue Diamond and Mountain Springs Summit--from the Las Vegas "Strip" U.S. 95 extends south for about 4 miles where State Route 16 bears off, almost due west to cross the Spring Mountain Range just north of Mount Potosi. The road is medium duty blacktop. By this route it is a fast 20 miles to the town of Blue Diamond. It makes possible a scenic loop of about 40 miles by return to Las Vegas on the Charleston-Sahara Boulevards approach. Continuing past Blue Diamond, State 16 climbs through the Cottonwood Valley presenting a splendid view northward along the face of the Bluffs to Calico Basin and La Madre Mountain. The highway enters the Bluffs through a rather narrow canyon, but the road is well graded and has gentle curves. Here one enters the Upper Sonoran Life Zone with its characteristic pinon pine and juniper growth. Mountain Spring Summit is a low-point on the Spring Mountain ridge at 5,500 feet elevation, and contains a small unincorporated community of homes and taverns. No spur roads enter the Bluff area very deeply from the summit pass, but the highway provides access to trailless hiking southward to the summit of Mount Potosi and northward to the higher country on top of the Sandstone Bluffs. The distance from the Las Vegas Strip to Mountain Spring Summit is about 25 miles. Two roadside rests with picnic tables exist at and near the summit. Two miles east of the summit a short spur road trends southwestward up a side canyon to unimproved church and Boy Scout camps in the pinon forest near Mount Potosi.

3. Red Rock Summit, Lovell Wash Route--for those interested in penetrating the back country--sampling the western slopes, or desiring a bit of adventure, this route will be of interest. It leaves State Route

16 three miles west of Mountain Springs Summit and makes its way into Lovell Wash at about six miles from the pavement. This portion is a re-routing of the old road that followed Lovell Wash all the way from the highway. The new route is not indicated on all maps, including the U.S.G.S. Topographic charts. This new route starts near the lower edge of the Pinon-Juniper belt (Upper Sonoran) and makes its way for about 7 miles, climbing slowly until a minor road takes off eastward up a side canyon. Turning on this road one climbs steadily between slopes forested in juniper, pinon, oak, mountain mahogany, cliff rose and other brushy vegetation until a pass is reached at Red Rock Summit. From here one can look upon the bold cliffs of La Madre Mountain to the north and northeast, the forested western slopes of the ridges west of the Sandstone Bluffs, and can gaze northeastward down the trough of Red Rock Canyon. This is the best point of departure for an easy penetration of the uplands of scenic ridges and sandstone summits. For those equipped with a high-centered car, truck, or jeep, the road can be followed down Red Rock Canyon. Here there are numerous switchbacks and rocky sections to traverse, but fine views of this rugged country make it quite worthwhile. There are interesting contrasts in vegetation, with giant ponderosa growing in watered and shaded spots not far from Joshua trees on drier slopes. Colored sandstone is not encountered until near the bottom, where the road swings southeastward and follows the gap through the eastern ridge. Willow Spring is passed on the left just before the road exits from the canyon onto the desert, after which the surface improves in the last few miles to its junction with the Charleston Boulevard approach. The mileage

from State Route 16 to Red Rock Summit is about 10 miles and from the summit to the junction with the Charleston Boulevard approach it is another 10 miles. It offers a scenic loop of about 60 miles from the Las Vegas Strip, through the heart of the back country, and back to Las Vegas.

4. Trout Canyon, Lovell Summit approach - A longer back-roads loop can be made over Red Rock Summit by following this dirt road from the west. The Trout Canyon road leaves State Route 16 from Pahrump Valley on the west side of the Spring Mountain Range about 22 miles beyond Mountain Springs Summit. One of its branches terminates at Trout Spring at the head of a deep, cliff-bound canyon of grey limestone where pinon and ponderosa pines meet. The spring water has been developed and no longer flows freely, but the canyon remains an interesting incision into the heart of the range. Above the canyon head towers 11,000 foot Baldy Peak in Toiyabe National Forest at the southern end of Charleston Ridge. Seven and one half miles off the pavement of Route 16 the Lovell Summit Road leaves Trout Canyon by way of an eastward trending draw. After eight or nine miles of sinuous mountain road through a heavy growth of large pinon pines one can crest Lovell Summit at 6,700 feet. From here the road drops rapidly to the floor of Lovell Wash and then follow down its course some four miles to the Red Rock Summit junction. From here one can return to Las Vegas by way of the rugged Red Rock Summit route or the less torturous road southward and back to State Route 16.

4. Main Points of Interest

a. The East-Face Canyons*

The view of the Sandstone Bluffs from the East has sweep and grandeur, but to come to intimate terms with the secrets of the Bluffs one should explore the East Face canyons. These exit, deep and narrow, from between the monolithic videttes of stone that guard the partals. To pass within one of these gates is to enter a world apart from the spacious high country or the sunny expanse of desert. Here red and buff walls rise steeply, often sheer on either hand, and seem to converge upon one as he penetrates further into the defile. The sun shines brightly on upper walls and the sky is a narrowing ribbon of blue above. But often as not, the canyon floor is shadowed and except for summertime is cool. Great and small rocks that at infrequent intervals have fallen from the walls adorn the canyon bottoms, and these contribute considerable diversity to the pattern of life found there.

Springs exit from aquifers in nearly every canyon, not continuously in each case the year around, but with a frequency and duration to contribute substantially to both erosion and the life forms found there. The rocks form dams behind which ephemeral water is impounded in delightful pools, sometimes deep and always a clear, cool green. Small waterfalls and lively cascades add their music from among, over, and beneath the boulders. Seldom is the flow from any of these springs continuous in time or in length along the channel. When snow is melting on the high ridges or after a rainstorm, the water music is loudest and

*Numbers are keyed to location points on the map.

the flow may be continuous for distances of several hundred feet, after which the stream quietly sinks into the gravel to re-emerge in spontaneous fashion here and there further along the course. Occasionally the pools of water deeply fill circular potholes formed by stones and sand swirled round and round by countless lively moments of stream flow. Once in a while a waterfall of considerable height falls from some higher tread along the canyon bottom, or else from a shelf or hanging gulch along the walls. More often than not only a black slick down the wall, a dry plunge basin, or a quiet trickle, is the clue to times of greater flow. At a few favored places, however, the volume is continuous most of the year and plunge pools stay filled to overflowing. In desert country such as this the smallest spring or waterfall has the impelling delight that only a cascade of some size would have in moister climates. Each of these unexpected rivulets accents itself by contrast with the arid desert so close at hand, and one feels compelled to linger by each pool or within sight and sound of each small cascade.

The colorful rocks and occasional springs of these deep cuts are of interest in themselves, but their shadowed depths and more frequent water provide a haven for a variety of interesting plants and animals as well. Indeed, a microclimate exists here that creates a sort of topsy-turvy lifezone sequence. Ponderosa pines, singly or in small groups, find water and shade enough to descend from their normal altitudes of 7500 or 8000 feet to the desert itself at 4000 feet. They are found growing at every altitude, from out of seeming impossibly small cracks on the summits of the bluffs and near permanent pools of water in the deep washes beyond the canyon mouths. Dry slope plants are abundant wherever the sun can reach the bottom. Oaks, silktassel, manzanita, and various cacti are common in the lower canyons and here and there throughout their lengths. In the cooler and more watered parts wild grape abound, climbing thickly over boulders and adding to the challenge of a walk. Broad-leaved trees appear commonly, especially the exquisite redbud or Judas Tree, and of course the magnificent ponderosa pine. Maidenhair, yellow mimulus and columbine appear in the spring beneath overhanging rocks where water flows and even a rare stream orchis is sometimes found beneath the low-spreading boughs of deciduous trees.

Among the animal life observed by the canyon explorer are the occasional mountain sheep down from the ridges to water at the pools. The rock squirrel is sometimes seen, and after spring rains when the pools are filled, toads are found in profusion. Hawks and violet-green swallows soar or sweep about the upper walls while the western tanager and canyon wren, among others, are frequently seen near the canyon bottoms.

Each of the canyons has its own individuality superimposed upon the basic characteristics. First Creek Canyon (1) is particularly narrow, is frequently well-watered, and difficult to penetrate by virtue of its numerous large boulders of red sandstone. It is perhaps the least frequently visited of the major canyons and is as yet completely unspoiled and wild. Yet it provides a rough route of access to the summit of Mt. Wilson and the other high bluffs above.

Oak Creek Canyon (2) is a bit more open, is accessible to its mouth over a rough road by car, and is easier to hike into. A half mile back from the portal it divides, each branch becoming steep and difficult, but providing some water most of the year.

Pine Creek Canyon (3) is straddled across its mouth by private land, but shortly up the canyon beyond private ownership it splits into two parts. The north fork is difficult, but provides an interesting view of the nearly sheer cliff that forms its northern wall. The south branch has perhaps the most plentiful and continuous flow of water of any of the canyons, and its fine pools and cascades are easily visited. A rough road brings auto access to the fence bordering the private land, which is posted against entry.

The next canyon north from Pine Creek has easy access to the hiker from the Red Rock Summit Road, and offers particular interest to the visitor in the form of a splendid waterfall of variable volume, that plunges to a deep and lovely pool at its base.

b. Picture Window Natural Bridge (4)

That spacious region of colorful stone, blue sky, and wide vistas that is the summit of the bluffs has a wealth of detail contained in the sculpturing of its domes and canyons of cross-bedded sandstone.

On the highest of all the bluffs, very close to the summit, is the unique feature that might best be called "Picture Window Natural Bridge". It is not particularly large as natural bridges go, but has a few unique features associated with it.

Along the north edge of the summit of this bluff are several very large "potholes", perhaps 30 or more feet across and having average depths of 20 feet or more. They may have formed by swirling wind action over great periods of time, the wind carrying grains of sand as the quarrying tools, which gradually eroded the circular depressions to their present depth. One of these potholes was formed quite near to the southwest wall of the bluff, and perhaps as time went on, the wind cut through the thinning wall to leave the natural bridge that can be seen today. The bridge is about 15 feet high and 10 feet wide, a great picture window from which one has a grand view across one of the deep but narrow canyons that dissect the face of the bluffs. The pothole itself varies in depth from about 20 feet on the window side to 30 or more feet on the inner side, and is quite round in plan view. From outside the window, the sandstone slopes away at a moderate angle for some 50 feet, after which the side of the bluff drops quite sheer for some hundreds of feet to the timbered floor of a narrow canyon.

Of particular interest are two ponderosa pines that adorn the views through the window from either direction. Looking inward one is surprised to find a large pine growing upward from the center of the basin, its summit reaching for the sunlight and extending well above the imprisoning walls. The view outward is also graced by a fine big pine whose roots seek nourishment in cracks within the sloping sandstone. The wintertime visitor to the bridge finds the great pothole deep in shadow, and rain and snow have left its floor a frozen pond several inches deep, that thaws and dries out only with the advance of spring.

"Picture Window Natural Bridge" is not too difficult to reach for one who exercises care, but its access may be more than some hikers will want to undertake. To reach it one must drop a few hundred feet along the sandstone ridge leading outward to the crest, and then scramble up a relatively steeppitch on solid sandstone to the bridge. Good traction soles on one's boots are a very good idea at this point.

c. Calico Hills and Basin (6,7,8)
By virtue of its color, water and accessibility, the Calico Hills area is perhaps best known of the entire bluff complex. To many people the mention of Red Rock Canyon calls to mind this particular area, and especially the basin that encloses Ash, Calico and Red Springs (6). A good gravel road enters the basin from the Charleston Blvd. access route (State 85) out of Las Vegas, which is a mere 10 miles from the basin. There are several privately owned parcels of land within the Calico Basin, none particularly close to the springs, and fairly unobtrusive at this time. The residents seem well aware of the area's unique values and have strong desires to have it protected.

The basin is bordered on the west and north by an especially brilliant red sandstone formation layered within the more common buff colored sandstones and grey limestones. The hills guarding the East side of the basin are low and unspectacular, but the brilliant ridges on the west and north rise to 500 and 1000 feet above the basin floor. The slopes of the ridges rise steeply from the basin floor for the most part, but in many places are stepped and terraced irregularly, smoothed and rounded, and in general attract visitors with an urge to scramble upon them.

The three springs, each accessible by a branch from the road into the basin, lie at the mouths of short canyons that exit from the southwest and west periphery. The flow fromnone of these is very great, but water of any kind is a great attraction on the desert to animal residents and human visitors alike. Along the short watercourses below these springs a scattering of trees have found conditons right for growth. Despite the obvious effects of heavy visitation by men, these and lesser plants have here and there persisted.

Besides the Calico Basin access, two other roads lead to the points of interest on the peripheries of the hills. One of these follows a broad, gravelly wash for about 5 miles northwestward from an obscure junction with the Charleston Blvd. route. This access is quite rough in places and should be attempted only by a high centered auto or truck. It follows along the northeast edge of the bright red outcrop until terminating at a water impoundment (7), built by the CCC. The impoundment collects and holds rainwater and snow melt which flows down the steep, brick red slopes above it. The pond is about 60 feet across and many feet deep in places, and undoubtedly attracts many wild creatures.

The Calico Hills can also be investigated by car along the four mile road that follows the southwest edge of the Calico outcrop (8). The line of demarcation here between red rock and grey alluvial desert is precisely drawn and a distinctive characteristic of the edges of the Calico Hills outcrop in general. The road terminates at a sandstone quarry along the soutwest base of the Calico Hills. (8)

From the terminal points of any of the access roads to the Calico Hills area, short hikes can be made to investigate the crowns of the hills and the secrets hidden amongst the arroyos that penetrate them. Thus an interesting hike can be started from the Impoundment basin on the northeast continued southwestward over the saddle at the southern base of the mountain known as Turtlehead (9), and terminated at the sandstone quarry on the southwest edge of the hills. Alternatively, one could make his way southward from the saddle by either of the two obvious canyons that thread through the hills and could terminate his walk at Ash Spring in the basin. Along the way are many small features of interest--smoothed water runways leading from deep potholes in the rock, natural ponds that collect the melt of infrequent snows and runoff from showers, and an occasional set of decaying wild sheep horns or deer antlers.

d. Miscellaneous Springs

Besides the springs of Calico Basin and those lying within the canyons of the bluffs, several others are to be found within the complex. Many of these have not been visited (by the writer) or checked for their scenic potential.

1. White Rock Spring (10) - Accessible via rough dirt road with a high-centered car only. Contains a concrete catchment tank, rough corral, and pipe which taps the spring underground and brings water to the tank. Water flow is small but continuous. Overflow from the

tank quickly seeps into the ground. Rock exposed is buff colored sandstone outcrop from a general grey desert alluvium. From near the spring good views are to be had southward along the face of the bluffs. The water may be essential to deer and lesser animal life of the desert.

II. Willow Spring (11) - Found directly alongside the road (State Route 85) in the mouth of Red Rock Canyon. It has a continuous water flow from out of a pipe into a catchment tank of concrete, which then overflows and quickly sinks into the ground. Considerable refuse appears here normally due to its easy access. Game must use the water when man is not about. Otherwise, it might support limited camping.

III. Waterfall Spring (17) - This may have another name. It may or may not flow year round. The water drops about 10 or 15 feet from the lowest riser in a short, steep canyon exiting from the Bluffs just south of the entrance to Red Rock Canyon. A trail starts inconspicuously from the wash just west of the road and wanders through the desert growth and willows, around a few boulders, crossing and re-crossing a small streamlet until the large plunge pool area is entered. This is rimmed with bushes of many types, and a small fall of water provides a delicate tinkling noise as it plunges into the small pool near the base of the cliff. The outflow stream is quite badly littered with the remains of temporary camps, including rotted springs and mattresses, and old fire pits and makeshift fireplaces. It deserves much better, but camping should be severely limited near here if allowed at all. It would provide an interesting nature walk from the road.

iv. Switchback and Line Pine Springs (12) - Both of these are dry or nearly dry, although water does sometimes drip from the pipe at Lone Pine. The central feature here at about 5800 feet elevation is the presence of a couple of mature ponderosa pine standing by themselves where they can take advantage of the spring water. It illustrates the unusual places at which vegetation will find suitable habitat given shade from the summer sun and water. Vandalism has destroyed a young pine here and litter abounds. It could be a nice picnic or rest spot. Joshua and yucca grow on the opposite side of the road and the canyon walls loom above the talus slopes.

v. Mud Spring and neighboring springs (13, 14) - These have not been investigated but should be, as well as the canyons of the south end of the bluff. This area presents views of the Bluffs northward to La Madre Mountain and the Calico Hills outcrop. It is accessible within a mile or two of the Mountain Springs Summit highway in Cottonwood Valley.

vi. Bootleg and Rainbow Springs (15, 16) - These also need investigating, since their surroundings might be excellent locations for higher level campsites. In considering use of any of these spring areas, however, the water needs of the sheep, deer and other animals must be considered top priority.

Recommendations

It was not long after World War II that it became dramatically evident to administrators of National Parks and National Recreation areas that the population explosion then and now in process was to have drastic effects on the assessment of the nation's recreation needs in years to come. That assessment was provided by a concerned Congress through the outstanding report of the Outdoor Recreation Resources Review Commission. Published early in 1962, after three years of labor, it reported exhaustively and graphically on three key aspects of the recreation problem: (1) the outdoor recreation wants and needs of Americans now and through the years up to the year 2000, (2) the recreation resources of the Nation available to satisfy those needs now and in the time up to year 2000, and (3) the policies and programs that should be adopted to ensure that the needs of the present and future are adequately and efficiently met.

The ORRRC report was not confined to recreation in the narrow sense of that on Federal lands alone, but concerned itself with needs, resources and policy findings that outdoor opportunities are most urgently needed near metropolitan areas. A person will visit a National Park once a year, perhaps once in ten years or maybe only once in a lifetime. Such visits may be the supreme outdoors experiences in a person's life, yet in the intervening time between such visits he will seek something akin to that experience closer to home.

Where can a person find such an experience in a day or a weekend? City parks can offer a touch of nature, but only in an artificial way. They offer physical recreation of a planned type, but nothing of the sense of contact with the outdoors, with wildness of nature, that we increasingly urban Americans still think of as the essence of our heritage. Many persons, particularly in a relatively unpopulated state such as Nevada, believe that shoulder contact with nature is to be had for the thousands where city lands end and federal land begins. This is the way most wilderness conservationists would have it if they could. "Let those that love it seek it, and if defacto wildness is close by so much the better". Unfortunately, the needs are for the many, and the many in this day includes a high percent who do not as yet understand the fragile nature, the ecology, of this asset they need, seek, and use. As they bring their alien pressures of numbers to bear on the natural areas near at home they leave their trails not only in jeep tracks but in litter and destruction of the very thing they seek. Understaffed and financially unprovided federal agencies are left in the impossible management position of trying to regulate this "mass" invasion not just because they recognize the threat to land and biological values but because they are increasingly aware of the needs of the people as well. The Bureau of Land Management holds in trust a great percentage of Nevada land, much of it close to our cities. It is responsible for the economic welfare of the land until its disposal to private persons or to other governmental agencies. In recent years the Bureau has recognized the pressures brought to bear by people seeking outdoor recreation and has sought to inventory its recreational and scenic resources, and where money can be obtained, develop for recreation certain of the areas that best qualify by reason of their outstanding nature or their heavy use. Unfortunately, their position is not yet strong enough in this respect to keep ahead of population pressures, to develop areas fast enough, and especially to maintain the management devices once installed. A paradox of sorts appears, for with the installation of improvements designed to cope with human pressures, more people visit such areas, and the pressures and management problems are increased in some sort of a spirally ascending manner.

Unfortunately, people seeking recreation where natural conditions are the prime asset, bring their destruction pressures to bear most heavily on areas that are: (1) scenically or otherwise most attractive, (2) closest to cities, (3) easy of access, and (4) least protected. It is no coincidence, then, that many such areas qualify for some sort of government control and management, and for the same reasons that lack of control can bring about their destruction.

The management of such lands once set aside for recreation poses numerous questions. What are the prime assets that are to be protected and how can protection best be afforded and still allow maximum enjoyment by the people? What use density in various parts of the area are permissible without loss of value, and how can density be kept low and still cope with demand? The design of such a protected area calls for great sensitivity on the part of the planner and administrator, not only in laying out boundaries, but in the organization of all use facilities such as access roads, and interpretive devices. In the case of each item the prime assets must be protected at all cost if the overall result is not to be reduced to mediocrity.

Southern Nevada is the fastest growing region in a state which in itself is showing tremendously rapid growth. Its development has brought increasingly harsh use pressures on all the surrounding countryside, and particularly on the Sandstone Bluff complex.

This region combines unique scenic, biological geological, anthropological and climatic assets into a relatively small area. The biological, scenic and anthropological assets are extremely fragile and are under heavy use pressures. At this time the heaviest pressures are being brought to bear on that area east of the Sandstone Bluffs where access by car is easiest. It manifests itself by a removal of cactus and other flora from alongside the access roads, illegal quarrying in gravel pits and red-rocks, defacing the roadsides and spur roads with abandoned auto hulks and garbade, littering springs with cloth, paper articles, tin cans and picnic refuse, and the abandonment of mattresses and bedsprings and other debris in temporary camps. Most of the canyons within the Sandstone Bluffs are relatively unhurt due to lack of knowledge about them by the general public, difficulty of access over rough roads, and the lack of trails into them.

The pressures of use are seen everywhere in Calico Basin (6) from permanent homes on privately owned land to partial development of some of the spring water, to destructive effects on vegetation near the outflows from the springs, and to defacement of rocks with painted initials. The local residents have attempted some sort of self-imposed zoning, signs asking cooperation of the visitor and neatly erected street signs at spur road intersections. Some buildings still need completion or cleaning up to be desirable so near to a proposed public recreation area. The canyons and regions a short distance removed from the springs area are relatively unaffected by use pressures, including the access road and impoundment basin area northeast of the Calico outcrop (7).

As time passes, the area east from the Bluffs and south from La Madre should feel increased pressures as real estate developments push west from the city and roads are improved to accommodate them.

The high ridge country and back country roads are relatively unblemished due to difficulty of access by modern, low-slung vehicles. Some serious damage is evident at Lone Pine Spring on the downgrade through Red Rock Canyon, where a unique cluster of large Ponderosa Pines has been defaced by the thoughtless chopping down of a young pine from the group. Litter abounds about this potentially delightful spot.

The following recommendations are concerned with much of the discussion which has preceddɗd:

Recommendation I. Because of the assemblage of assets in the Sandstone Bluffs area, the present and future outdoor recreation needs of an expanding Southern Nevada population, and the existing and growing use pressures, a conservation reserve should be established in the Bluff area.

The recreation resources of the recommended reserve are zoned according to the ORRRC classification system, which specifies a type of management for each of six classes of areas. The boundaries have been selected to insure the integrity of each of the classification zones. For example, where an important Class IV "Unique Natural Area" can only exist by virtue of an appropriate atmosphere devoid of distracting influences, then the boundaries have been set far enough removed from the area to assure the future preservation of this atmosphere. Where possible, boundaries have been set along "naturally defensible" features of terrain. In this way alien pressures can often be tolerated to the borders without loss of recreational values. The guiding principle in selection of boundaries has been the preservation of the prime recreational resource value of each of the zones laid out.

Recommendation II. Within the conservation reserve, boundaries of recreation resource classification zones (ORRRC) should be as outlined on the attached map, and described below:

Class II (Areas A, B, C ,F) - General Outdoor Recreation Areas. Roads make these areas already or potentially accessible. They contain some water, much color, and room for camps in locations inconspicuous from natural areas. They provide relief from camping pressure on the sensitive Unique Natural Areas.

Class VI (Areas D, E, portions of B and others) - Historic and Cultural Sites. These areas include significant petroglyphs, campsites and mescal pits of pre-historic Indians. Numerous other points could be spotted within other areas and should be afforded protection.

Class III (Area G,I)- Natural Environment Area. This generally included the area surrounding the Class II areas and extending from the Eastern border up to within about one mile of the Bluffs. Also, the land immediately adjacent to all access roads and through roads including that over Red Rock Summit. It is an essential buffer zone to maintain the integrity of the Unique Natural Area.

Class IV (Area H) - Unique Natural Area. This might generally include all the region between the west ridge of Area F (Class III) and the ridge crest, but especially the individual canyons (1, 2, 3 and 4 and the highlands of the Sandstone Bluffs including Mt. Willson and Peak 7200 immediately north from Pine Creek Canyon. (Both peaks accessible by suggested spur trails, see map.)

Class V (Area J) - Primitive Area. This would best include all the area from the trail along the crest westward to the park boundaries (excluding the Red Rock Summit road environs). Its integrity would for the most part be assured by the extensive ridge west of the crestline trail, which would exclude distracting influences along the Lovell Wash road by screening it from view.

It should be mentioned that suitability of some Class II areas should be examined in more detail, especially in Areas F and H (Adverse archeol. impact?).

The boundaries along the West ridge of Blue Diamond Hill and near the summit of La Madre Mountain are "naturally defensible boundaries" against distrubing influence from outside the preserve. The Blue Diamond Hill line provides essential integrity to the sweeping views of bluff and canyon that are the essence of the Unique Natural Area (AreasH above). The western boundary near the crest of the ridgeline that lies west from the trail line was chosen to prevent "creep" of distracting influences within line of sight from anywhere on the main crest. The southern boundary along the Mountain Springs Summit highway allows future development of Class II units where easily accessible by auto, and encourages tourist-type accommodations at the adjacent community of Mountain Springs.

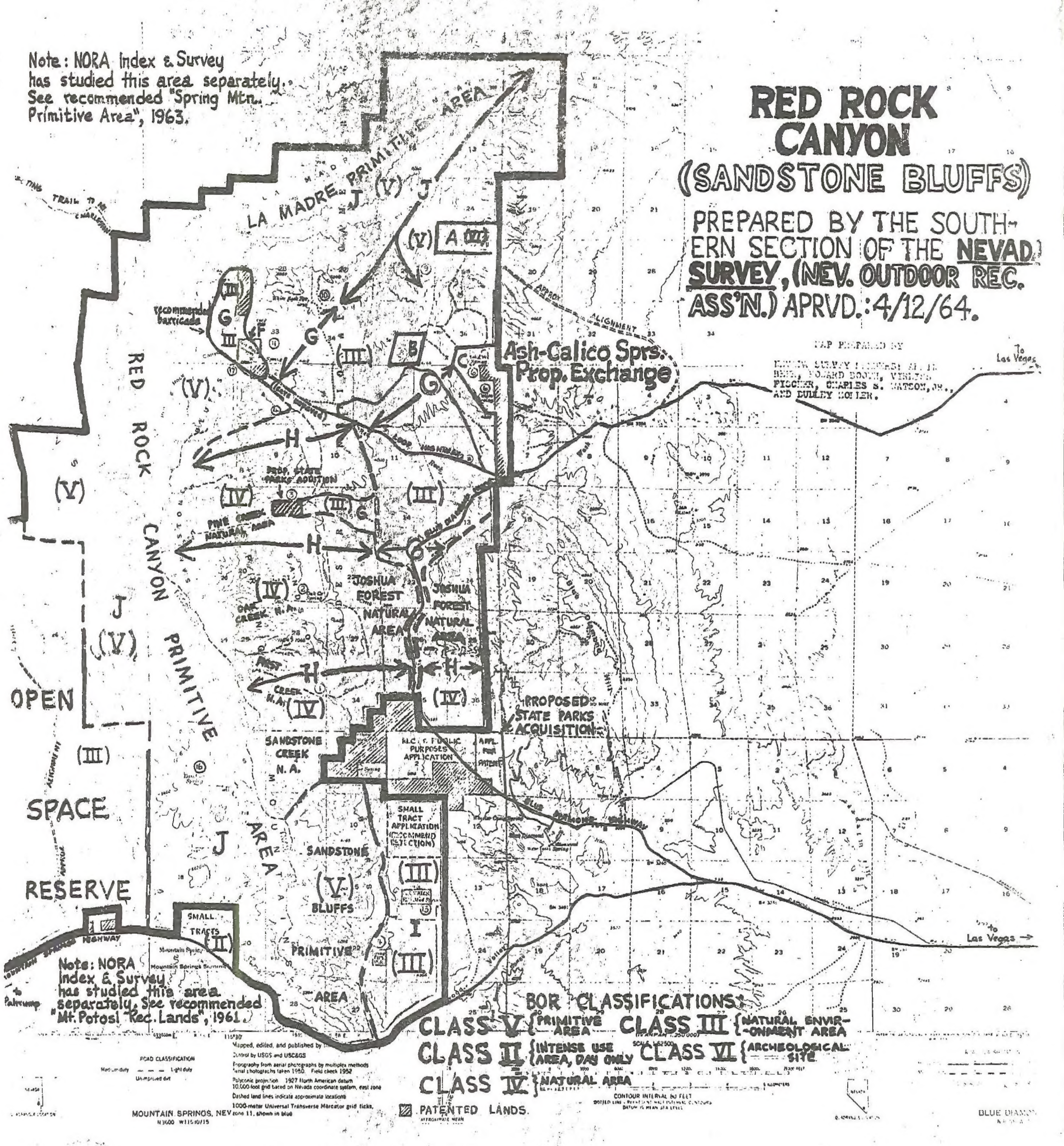
Recommendation III. Roads should be improved only to the extent required for safety, and in every case conformity to the aesthetic sense of the countryside should prevail. It is strongly recommended that no roads be allowed along the ridge crest, except for short spurs to scenic overlooks at extreme north and south ends of the bluffs if public demand is sufficiently strong. At these locations picnic spots might be constructed.

Recommendation IV. A trail system should be constructed connecting the main points of interest such as the canyons of the Bluffs. Trails penetrating the very narrow canyons such as upper Pine Creek Canyon must preserve the unique assets of the waterways, rocks and flora. One of this type of canyon should be retained in its current trailless condition, preferably First Creek Canyon. The crestline trail would follow the undulating ridgetop above and west of the Sandstone Bluffs and would offer outstanding hiking any season of the year. The spur trails to the summits of Mt. Willson and Peak 7200 near Pine Creek Canyon would offer views which are superlative.

Recommendation V. Interpretive displays could be built at locations of prime interest. These would like include the mouth of Pine Creek Canyon, Calico Hills Area (6 or 7) and possibly Red Rock Summit.

Recommendation VI. Camping facilities might be located at 6, and 8 in the Calico Hills Area, Lone Pine Spring in Red Rock Canyon, at Red Rock Summit (dry camp) and near Bootleg Spring (Area I).
Hikers' camps with minimum sanitary services could be provided somewhere along the crestline trail (dry) and near the pools outside the mouths of Oak Creek or First Creek, but no car camping should be made possible here. It is strongly recommended that no picnicking or camping be allowed within the canyons of First Creek or Pine Creek. Their biological assets are too fragile.

Chas. A. Watson Jr.
March 21, 1964



RED ROCK CANYON (SANDSTONE BLUFFS)

PREPARED BY THE SOUTHERN SECTION OF THE **NEVADA SURVEY**, (NEV. OUTDOOR REC. ASS'N.) APRVD.: 4/12/64.

MAP PREPARED BY
NEVADA SURVEY [illegible] AL H.
BEER, HOWARD BOOTH, VIRGINIA
FISCHER, CHARLES S. WATSON, JR.,
AND DUDLEY [illegible].

Note: NORA Index & Survey has studied this area separately. See recommended "Spring Mtn. Primitive Area", 1963.

Note: NORA Index & Survey has studied this area separately. See recommended "Mt. Potosi Rec. Lands", 1961.

BOR CLASSIFICATIONS:

- CLASS V {PRIMITIVE AREA
- CLASS III {NATURAL ENVIRONMENT AREA
- CLASS II {INTENSE USE AREA, DAY ONLY
- CLASS VI {ARCHEOLOGICAL SITE
- CLASS IV {NATURAL AREA

▨ PATENTED LANDS.

LA MADRE PRIMITIVE AREA
J (V) J
(V)
A (VI)
recommended barricade
G
III
F
G
(III)
B
C
G
Ash-Calico Sprs. Prop. Exchange
APPROX. ALIGNMENT
RED ROCK CANYON PRIMITIVE AREA
(V)
H
PROP. STATE PARKS ADDITION
(IV)
(III)
(III)
PINE CREEK NATURAL AREA
H
JOSHUA FOREST NATURAL AREA
JOSHUA FOREST NATURAL AREA
OAK CREEK N.A.
(IV)
FIRST CREEK N.A.
H
H
(IV)
(IV)
PROPOSED STATE PARKS ACQUISITION
SANDSTONE CREEK N.A.
R.L.C. & PUBLIC PURPOSES APPLICATION
APPL. FOR PATENT
SMALL TRACT APPLICATION (RECOMMEND REJECTION)
(III)
I
(III)
SANDSTONE (V) BLUFFS PRIMITIVE AREA
OPEN SPACE RESERVE
J (V)
(V)
(III)
J
SMALL TRACTS (II)
MOUNTAIN SPRINGS HIGHWAY
to Pahrump
Mountain Springs
Mountain Springs Summit
To Las Vegas
to Las Vegas
BLUE DIAMOND HIGHWAY
TRAIL TO MT. CHARLESTON
Mapped, edited, and published by the
Control by USGS and USC&GS
Topography from aerial photographs by multiplex methods
Aerial photographs taken 1950. Field check 1952
Polyconic projection. 1927 North American datum
10,000-foot grid based on Nevada coordinate system, east zone
Dashed land lines indicate approximate locations
1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue
MOUNTAIN SPRINGS, NEV.
N3600 W11510/15
SCALE 1:62500
CONTOUR INTERVAL 80 FEET
DATUM IS MEAN SEA LEVEL
BLUE DIAMOND
ROAD CLASSIFICATION
Medium-duty
Light-duty
Unimproved dirt

MIKE O'CALLAGHAN
Governor

NEVADA

NEVADA STATE PARK SYSTEM

ERIC R. CRONKHITE
Administrator

ROOM 221
NYE BUILDING
201 S. FALL STREET
CARSON CITY
NEVADA 89701
702/882-7339

April 15, 1974

Mr. Edgar Rowland, State Director
Bureau of Land Management
300 Booth Street
Reno, Nevada 89502

Dear Mr. Rowland:

Subject: RED ROCK CANYON ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING

The comments of the Nevada State Park System, in reference to the Red Rock Canyon E.I.S., fall into two categories--a statement which follows and an attached list of comments by page number which suggests updating of information, factual corrections, and general comments.

The State Park System has been a partner of the Red Rock Master Plan which the Environmental Impact Statement evaluates. As a partner, our function at this meeting is to hear the views of the several organizations and public here to testify, then after review, take a position on the course of action which should be undertaken for Red Rock.

In the review of the E.I.S., we note several broad deficiencies which exist.

1. There are several alternatives discussed in the level of development proposed at Red Rock but nowhere does the statement make mention of the type of management proposals to implement those alternatives.

2. The possible environmental impact on road construction as proposed in the master plan precipitated, the environmental impact statement to be prepared. There is little discussion on the impact of road construction particularly on that regarding segment B, which with the proposed Skyline Road, is a controversial issue.

a division of the Department of Conservation and Natural Resources
Elmo J. DeRicco, Director

Appendix E

3. The E.I.S. is deficient in its discussion of water rights, protection of water sources, and the evaluation of the availability of water in Red Rock Canyon. II-20

4. Alternatives 5 & 6, as outlined on the chart on page 124, assume the area will be available to the fullest potential which undoubtedly would not be acceptable to some segments of the public and therefore, would not receive their endorsement. We propose the text of alternatives 5 & 6 be more explicit in indicating these alternatives could be combined with alternatives 1, 2, or 3.

The State Park System has recently purchased two choice parcels of land in Red Rock Canyon, Spring Mountain (528 acres) and Pine Creek (80 acres) Ranches. There are several alternatives the state can select in developing and managing these properties. A determination of use needs to be made soon in order for the State Park System to effectively manage its land in conjunction with the overall Red Rock complex and to expend its appropriations effectively.

The E.I.S. was prepared to evaluate a master plan completed in 1968. Significant changes since then have taken place in public attitude towards the environment, resource protection, and open space preservation which would lead us to recommend the master plan be updated to meet the objectives expressed by the public at this 1974 E.I.S. hearing.

With the BLM's participation, we propose to update the Red Rock Canyon Master Plan. Special emphasis would be placed on visitor enhancement plans and resource preservation on the state areas at the Spring Mountain/Pine Creek Ranches where several hundred thousand dollars is available for visitor improvements.

The master plan update is proposed to determine capacities for recreation facilities and visitors for those sites designated within the scope of the E.I.S. selected alternative. Facility capacity as established in the 1968 master plan, should be carefully reconsidered in view of possible adverse environmental impact. An updated plan would also recommend that further road construction would be implemented only as management capability expands.

The State Park System is working on an operations plan to permit tours and visitation by the public in limited numbers into the Spring Mountain Ranch. We think it is important that the public see the property which was purchased with state and federal funding. Preservation of the ranch's character and environment will dictate the conduct of these tours. Public access to the Spring Mountain Ranch will be only to the extent of personnel capability to manage visitors without causing damage or jeopardizing the integrity of the ranch.

Prior to implementing the master plan on any specific site, an archeological survey should be undertaken. The State Park System is now preparing to enter into contract with the University of Nevada, Las Vegas under the direction of Dr. Richard Brooks for a survey of the Spring Mountain and Pine Creek Ranches.

Final evaluations of the E.I.S. need to be timely in order for us to move ahead as quickly as possible in management, facility enhancement, and procurement of funding.

Sincerely,

Eric Cronkhite

Eric R. Cronkhite
Administrator

ERC:lk

Attachment

RED ROCK ENVIRONMENTAL IMPACT STATEMENT COMMENTS

In Reference to Page Numbers

Summary Page

#2 - Update ownership status include state lands. II-50

Page 1 - Conflict of acreage described on this page and summary sheet.

Page 5 - Recreation Development Areas - Suggest the word "intensive" be dropped.

Commercial Public Service Areas - The lodge area as proposed, should be reconsidered in view of recent public acquisition. I-1

Page 6 - Dump - Suggest dump site be dropped from plan and be replaced by commercial service. IV-4

Eliminate crestline road.

Map #3 - Brownstone Road not shown.

Page 16 - Water - Reference should be made to recent state acquisition of water rights in Red Rock Canyon including quantities. II-20

Page 42 - Desert Bighorn - Verify number of sheep in area; the figures quoted appear high. II-33

Page 48 - Free Roaming Burro - Hearsay observation of a resident in Calico Basin, indicates this burro herd is no longer in Calico Basin area. II-35

Page 49-50 - Livestock - Update grazing privileges as related to state purchase of Spring Mountain Ranch. II-37

Page 55 - Willow Springs referred to as picnic site when actually it is a campground. I-6

Map #8 - Not all existing roads shown on map.

Page 61 - Update state acquisition of Spring Mountain Ranch (Bar Nothing Ranch) and Pine Creek Ranch. II-50

Page 62 - Verify if acreage of Bonnie Springs Ranch and Oliver Ranch is quoted accurately. We think the Oliver Ranch is about 120 acres and the Bonnie Springs Ranch 320 acres. II-50

Update progress of Bonnie Springs' western town to present degree of completeness. II-50

Page 68 & Map #11 - The low scenic value rating given to the valley floor would indicate something less than what the area actually provides. The valley floor is the area which provides the dramatic foreground, framed by interesting vegetation to the very dramatic and colorful escarpment.

Page 70 - Lacks reference to N.S.P.S. role and authority in Red Rock Canyon. I-12

Page 72 - Social & Economic - Percentage of state population represented by Clark County is less than 60%. II-61

Page 74 - Statement concerning energy crisis and its effect on use would be appropriate on this page.

Page 79 - Water - Reference to state acquisition of water.

No reference made to BLM water logs of past drilling operations or quantities available in spring flows. II-20

Map #12 - Legend doesn't coincide with map.

Page 88 - Livestock use no longer in effect in areas described. II-37

Page 89 - We question permitting the collection of petrified wood as an acceptable recreation activity in this recreation area.

Page 106 - Livestock - Update to reflect N.S.P.S. acquisition program.

Page 108 - #2-3 - Updating of plan is needed to determine optimum facility and visitor capacities of individual sites.

Page 124 - Alternative 6 assumes full development. In reality, alternative 6 would tie into one of the other five alternatives for development and should not be considered separately.

Page 128 - Livestock use phased out by N.S.P.S. purchase.

Page 152 - Livestock use phased out by N.S.P.S. purchase.

Page 153 - Question with adequate patrol if ORV would be as difficult to manage as stated in E.I.S.

Page 160 - This reviewer would question if the Las Vegas economy would even notice any difference with or without development. The economic impact of Red Rock would appear to be too insignificant to mention. III-22

Page 193 - State Park Advisory Commission listing and addresses not accurate. IX-1

LETTERS FROM STUDENTS

APPENDIX F

Dear Mr. John S. Boyles

I think we should keep red rock canyon as it is and just put a few tables in it.

Yours
Truly

Bill Burkholder

André Servaile

Dear Mr Bogley,

I think the Red Rock area can be used for a picnic area and also for recriational purposes. But you should leave most of the nature as much as posible. Like don't put to many picnic tables, cause it might look like a maise or a cafe. Just put a couple of tables in one area and a couple of tables in another area.

Dear Mr. Boyles 4/16/74

I would rather prefer Red-Rock to be the way it was met to be. The reason is there are little kids that would like to see it, the way thier parents saw it. They are also killing wild life. They're killing the animals that God made to stay on earth.

Sincerily

Kathy
Carllile
Las
Vegas
Nevada

Max Torres
805 Zillis Ave.
No. Las Vegas, Nev.
89030

Dear Mr. John S. Boyle

I think you should leave red rock the way it is so wild life wont be destoried. Make it into picnic area grow three's. Don't destorie nature.

Sing Max Torres

Dear John S. Boyles Vickie Crowder

I feel that the Red Rock area should be left as natural with a few more plants added to make the scenary more natural. And there should be a guide so the people can't go out and destroy nature.

Dear John S. Boyle,

I wish you would keep it as naturly as poible I aagrey with Carrol Bowmn.

Sincerely,
Michele E[illegible]
Michele C[illegible]

PETITION

WHEREAS, the Director of the Nevada State Bureau of Land Management, U. S. Department of Interior has prepared a draft of an Environmental statement for the RED ROCK RECREATION lands in Las Vegas, Nevada; and

WHEREAS, the undersigned, all being residents of Clark County, Nevada, to desire to make known their interest in these proposals and to suggest other proposals for the use to which these lands must be put to preserve their beauty and integrity.

NOW, THEREFORE, the undersigned does submit the following Petition and proposals:

1. That no further action be taken in connection with the RED ROCK RECREATION lands as generally set forth in Alternative IV, provided however, adequate and complete management and control of the area as it is now developed be provided and maintained for the immediate future.

2. That the undersigned and each of them petition and request that no further development be undertaken of these lands and that no roads or facilities be constructed, but that all facilities and roads, as they now exist, be maintained, and that areas be patrolled and managed by competent personnel in sufficient numbers to insure preservation of the wild area as it now exists.

DATED this 15th day of April, 1974.

APPENDIX G

NAME OF PETITIONER:	ADDRESS:
Richard Shealy	2800 AVALON AVE
[illegible]	1800 So. 15th St.
James March	3859 WOODHILL
Felecia Williams	2411 Mason Lane
Marlon J. Hoesly	2728 Polar Court, L.V.
Gene Stokes	2101 Berkley
Carol Bazar	1301 Cherokee Lane. L.V.

March 3, 1849

United States Department of the Interior

NATIONAL PARK SERVICE
WASHINGTON, D.C. 20240

370

4/9

4/9

RKS 4/11

IN REPLY REFER TO:

L7619
(WR)PSE

APR 3 1974

Memorandum

To: Director, Bureau of Land Management

Through: Assistant Secretary for Fish and Wildlife and Parks

RR 4/3

From: Acting Associate Director

Subject: Review of draft environmental statement for Red Rock Canyon Recreation Lands, Nevada (DES 74-8)

We have reviewed the subject draft environmental statement and are pleased to offer these comments.

COMMENTS ON THE PROPOSED ACTION

The proposed management plan would not affect any existing, proposed or known potential units of the National Park System, nor any historic, natural or environmental education properties listed as National Landmarks. II-47

COMMENTS ON THE ENVIRONMENTAL STATEMENT

The statement fails to indicate that the National Register of Historic Places or the State Historic Preservation Officer were consulted to determine the presence or absence of properties either listed on or in the process of nomination to the National Register of Historic Places. II-47

In addition to the archeological survey mentioned on page 109, we also recommend a systematic survey of those areas not directly affected by the project. The purpose of such a survey would be to identify, describe, and evaluate all cultural resources in the Red Rock Canyon Recreation Lands area, pursuant to section 2(a) and section 2(b) of Executive Order 11593. IV-10

JOHNNY HORIZON
'76

Let's Clean Up America For Our 200th Birthday

The statement on page 66 that "The Paiutes were a gathering people doing some hunting, and practicing an insipid agriculture" is inaccurate. The word "insipid" should probably be replaced with the word "incipient." On pages 116 and 121, the word "stratography" should be corrected to read "stratigraphy." II-44

Raymond L. Freeman

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

1500 N. E. IRVING STREET
P. O. BOX 3737
PORTLAND, OREGON 97208

Bureau of Land Management
MAY 23 1974
Las Vegas District Office
Nevada

5/20
5/20

Reference: RB

MAY 13 1974

To: State Director, Bureau of Land Management
Reno, Nevada

From: Regional Director, Bureau of Sport Fisheries and Wildlife
Portland, Oregon

Subject: Review of draft environmental statement for Red Rock Recreation Lands, Las Vegas, Nevada (DES-74/8)

This responds to your letter of February 21. We have several comments and suggestions for improvement.

Map No. 1 should be revised so that the general location map occupies a minimum portion of the page. Most of the page should contain a topographic map of the Recreation Lands showing all place names mentioned in the statement.

The legend on Map No. 2 should include: (1) a mileage scale, (2) definition of the Recreation Lands boundary line, and (3) definition of the circle at Willow Springs.

The authority for describing an animal as an endangered species in Nevada should be cited on page 47. II-31

Under Livestock, the final statement should show whether domestic sheep are included in the grazing application. Domestic sheep are direct competitors with bighorns for food. II-37

On page 81, Soils, and page 82, Vegetation, we suggest deleting mention of how much impact wildlife will have on soil and vegetation. Wildlife is a part of the environment, not the proposed action.

The impact of the proposed Crestline Drive on bighorn sheep would be greater than described in the draft on page 86. This road would allow frequent motor vehicle traffic into important bighorn escape cover. The disturbances associated with the road would prevent bighorns from using a several-hundred-yard-wide strip on both sides of the road. III-12

A seventh alternative should be analyzed: Limited development below the escarpment and none above the escarpment. VIII-30

We appreciate the opportunity to review and comment on this draft.

R. Kahler Martinson

R. Kahler Martinson

4/1
4/1
4/4
4/5
4/8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
100 CALIFORNIA STREET
SAN FRANCISCO, CALIFORNIA 94111

Mr. E. J. Rowland, State Director
Bureau of Land Management
Rm. 3008 Federal Building
300 Booth Street
Reno NV 89502

MAR 29 1974

Dear Mr. Rowland:

The Environmental Protection Agency has received and reviewed the draft environmental statement for Red Rock Recreation Lands, Las Vegas, Nevada, dated February 21, 1974.

EPA's comments on this draft have been classified as LO-2, specifically no objection to the proposed action. However, we find that additional information is warranted, as delineated in the enclosed comments.

The classification and the date of EPA's comments will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal actions under Section 309 of the Clean Air Act. Definitions of the categories are provided on the enclosure. Our procedure is to categorize our comments on both the environmental consequences of the proposed action and the adequacy of the impact statement at the draft stage.

Sincerely,

Paul De Falco

Paul DeFalco, Jr.
Regional Administrator

Enclosures

cc: Council on Environmental Quality, Wash., D.C. 20460
    Attn: Editor, 102 Monitor

Comments on the draft environmental impact statement for Red Rock Recreation Lands, Las Vegas, Nevada.

The major deficiencies found in this draft statement concern the problems of fugitive windblown dust occurring during the construction phase and during parkland usage.

1. Construction Phase.
   EPA suggests that the construction and other topsoil disturbing activities be undertaken in accordance with the provisions of Section 19 of the Clark County Air Quality Regulations (Fugitive Dust); furthermore, we recommend that construction activity be conducted under the "permission to disturb topsoil" permit requirements of this regulation in order that the air pollution control officials of the County are fully advised of the activity. IV-1

   In addition it is suggested that the mitigating measure described on page 103 item 1 be reworded (and implemented) as follows: "Limit the amount of clearing in advance of facility construction to the smallest areas practicable to minimize vegetation and topsoil disturbance. Disturbance which is unavoidable shall take place as close to the date of commencement of construction activities as possible, and all disturbed vegetative areas shall be rehabilitated immediately after the completion of construction activities." IV-1

2. Parkland Usage.
   The environmental impact section deals with current vehicular usage and pollutant emission estimates. No attempt is made to quantify anticipated vehicular usage. High vehicle usage on unpaved roads in the area, or high intensity usage of off-the-road vehicles on gravel and dirt trails, may indicate that significant fugitive dust emissions may occur. While it would be difficult to relate vehicle usage to air quality, significant fugitive dust emissions from automobiles would suggest prohibition or limitation of off-the-road vehicle usage, more paving requirements, or stabilization of the auto trails to reduce emissions. Anticipated auto usage should allow for estimates of the possible seriousness of this problem. III-1

Environmental Impact of the Action

LO--Lack of Objections

EPA has no objections to the proposed action as described in the draft impact statement; or suggests only minor changes in the proposed action.

ER--Environmental Reservations

EPA has reservations concerning the environmental effects of certain aspects of the proposed action. EPA believes that further study of suggested alternatives or modifications is required and has asked the originating Federal agency to reassess these aspects.

EU--Environmentally Unsatisfactory

EPA believes that the proposed action is unsatisfactory because of its potentially harmful effect on the environment. Furthermore, the Agency believes that the potential safeguards which might be utilized may not adequately protect the environment from hazards arising from this action. The Agency recommends that alternatives to the action be analyzed further (including the possibility of no action at all).

Adequacy of the Impact Statement

Category 1--Adequate

The draft impact statement adequately sets forth the environmental impact of the proposed project or action as well as alternatives reasonably available to the project or action.

Category 2--Insufficient Information

EPA believes that the draft impact statement does not contain sufficient information to assess fully the environmental impact of the proposed project or action. However, from the information submitted, the Agency is able to make a preliminary determination of the impact on the environment. EPA has requested that the originator provide the information that was not included in the draft statement.

Category 3--Inadequate

EPA believes that the draft impact statement does not adequately assess the environmental impact of the proposed project or action, or that the statement inadequately analyzes reasonably available alternatives. The Agency has requested more information and analysis concerning the potential environmental hazards and has asked that substantial revision be made to the impact statement.

If a draft impact statement is assigned a Category 3, no rating will be made of the project or action, since a basis does not generally exist on which to make such a determination.

Figure 3-1. Attachment
Page 2 of 2

United States Department of the Interior
BUREAU OF RECLAMATION
WASHINGTON, D.C. 20240

MAY 23 1974

5/28
5/28
5/24
5/30

IN REPLY REFER TO: 430
125.

Bureau of Land Management
JUN 5 1974
LAS VEGAS DISTRICT OFFICE
Las Vegas, Nevada

Mr. E. I. Rowland
State Director
Bureau of Land Management
Room 3008 Federal Building
300 Booth Street
Reno, Nevada 89502

Dear Mr. Rowland:

We have reviewed your draft environmental statement for the Red Rock Recreation Lands, Las Vegas, Nevada (DES 74-8). Since development and management of the Red Rock Recreation Lands does not appear to affect any Reclamation projects or activities, we have no comments at this time.

We would appreciate receiving a copy of the final environmental statement when it is available. Thank you for the opportunity to review this proposal.

Sincerely yours,

E F Sullivan

Assistant Commissioner

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

United States Department of the Interior

BUREAU OF OUTDOOR RECREATION
WASHINGTON, D.C. 20240

IN REPLY REFER TO:
E3021

NOV 13 1975

Memorandum

To: Director, Office of Environmental Project Review

From: Director, Bureau of Outdoor Recreation

Subject: Final Environmental Impact Statement for the Red Rock Canyon Recreation Lands

In response to your request for our review of this statement, we submit the following comments for your consideration.

The statement appears to be consistent with our record of the project aspects that have involved this Bureau's Land and Water Conservation Fund program. We do recommend, however, that section II.D.3b(3) on page II-50, entitled "Nevada State Park System Acquisitions", note that both the Spring Mountain Ranch and Pine Creek Ranch parcels were acquired with assistance from the Land and Water Conservation Fund. The Bureau of Outdoor Recreation approved the Pine Creek Ranch Acquisition grant on June 30, 1972. The Fund provided $224,500 (50 per cent of the approved project cost) for the acquisition. The Spring Mountain Ranch Acquisition grant of $1,625,000 (50 per cent of the approved project cost) was approved on April 30, 1973. In addition, the Bureau recently approved a development grant of $20,000 for picnic facilities in the Spring Mountain area.

We appreciate the opportunity for this review.

United States Department of the Interior
BUREAU OF MINES
EAST 315 MONTGOMERY AVENUE
SPOKANE, WASHINGTON 99207

10/6

10/7

Western Field Operation Center
October 1, 1975

Mr. E. I. Rowland, State Director, Nevada
Bureau of Land Management
Room 3008 Federal Building
300 Booth Street
Reno, Nevada 89502

Dear Mr. Rowland:

Your request for assistance in evaluating the Final Environmental Impact Statement for the Red Rock Canyon Recreation Lands has been referred to this office for review and comment on possible mineral involvement.

While mineral resources are discussed at some length, we do have the following comments to offer.

The Red Rock recreation area lands have been withdrawn from mineral entry subject to valid existing rights. Possibly there is an unknown added mineral potential associated with these existing rights. This potential for development should be stated in the proposed plan and each of the alternatives. 1

Although production figures are confidential, our records indicate that production from the Blue Diamond gypsum mine exceeds the amount shown on page II-13 significantly. If the land withdrawal has had adverse impact upon the resources or reserves of this operating property, this should be explained. 2

There are mining claims and operating mineral industry facilities in and near the withdrawl area. We feel a suitable mineral resource appraisal of this area should be made before permanently excluding the recreation lands from mineral development. 3

Sincerely yours,

Kenneth D. Baber

Kenneth D. Baber, Acting Chief
Western Field Operation Center

1. There are geological formations within Red Rock which are similar to those presently being mined for its gypsum content by the FlintKote Company. As such, there may be potential for gypsum within the Red Rock Canyon Recreation Lands. However, these lands were closed to mining on June 27, 1967, by Classification Notice N-257. In regard to other minerals, see Chapter II, page 13.

2. Todate, the existing segregation of the Red Rock Area from mineral entry appears to have had little or no impact on the Blue Diamond operation. Blue Diamond is, in fact, planning expansion of its facility based on existing reserves as discussed in Chapter II, page 13.

   There is the possibility of public pressure on Blue Diamond to restrict its activities to areas not noticeable from the Red Rock Recreation Lands. Discussion of potential impacts from and on this mining operation is found in Chapter III, pages 2 and 3.

3. Closure of the Red Rock area to mineral entry is discussed in Chapter II, page 12.

4/22
4/22
4/23
JB 4/2 —

March 3, 1849

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
WASHINGTON, D.C. 20242

IN REPLY REFER TO:
Trust Facilitation
Environmental Quality

Memorandum

APR 19 1974

To: State Director
Bureau of Land Management
Reno, Nevada

From: Acting Director, Office of Trust Responsibilities

Subject: Review of Draft Environmental Statement for the Management and Development of the Red Rock Canyon Recreation Lands - Nevada (DES 74/8)

In reference to your letter of February 21, 1974, the proposed recreation plan has been reviewed. Our review did not identify Indian land or interests in the close proximity which would be adversely affected by the proposal.

K
5/16

United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VIRGINIA 22092

OFFICE OF THE DIRECTOR

MAY 2 1974

Memorandum

To: State Director, Bureau of Land Management, Reno, Nevada

Through: Assistant Secretary---Energy and Minerals

MAY 13 1974

From: Director, Geological Survey

Subject: Review of draft environmental statement on the Recreation Management Plan for Red Rock Canyon Recreation Lands (RRCRL), Nevada

We have reviewed the subject draft environmental statement as you requested in a memorandum of February 21.

Significant adverse environmental impact related to the geology of the area of the proposed project is not anticipated.

Page 39, last paragraph: If septic tanks are to be used in the Red Rock area, their location in relation to any water-supply sources (wells, springs) in the proposed Red Rock Recreational Area could be critical to public health. However, they would pose little or no hazard to ground-water use in the Las Vegas area some 10 miles away, as is suggested on page 84, second paragraph. III-7

Page 80, second paragraph: The draft states, "The use of ground water could decrease the amount of water in the Las Vegas Ground Water Aquifer." Pumpage from the aquifer in 1973 was at least 75,000 acre-feet. Thus, under the proposed plan to pump 46 acre-feet per year, the effect would be minor to negligible, as pointed out at the top of page 81. This comment also applies to the section "Water," on page 120. III-7

Page 80, third paragraph: The draft statement assumes that the only source of imported water would be the Colorado River of the Las Vegas Valley Water District (referred to as the City of Las Vegas in the draft).

The possibility of obtaining water rights to springs or streams in adjacent drainages of the Spring Mountains to supply up to the required 46 acre-feet per year (30 gpm) might also be considered.

Page 93, first paragraph: There is no mention whether the solid-waste disposal pit could contaminate nearby wells, if any, by leaching (precipitation during storm events or flood waters). III-7

The statement fails to assess the mineral potential of the area except for some minor references to locatables and building materials. No mention is made of oil, gas, geothermal, or other leasable minerals. II-12

The Geological Survey has made several mineral reports on specific parcels within the proposed recreation area in the past, and in every case stated the lands were valuable for oil and gas. There are records of two oil and gas lease applications and an oil and gas lease within the proposed recreation area. Two of the most intensively explored areas in Nevada, the Arden dome and Sloan anticline, are within 15 miles of the proposed recreation lands, and the same rock stratigraphic units underlie each area. II-12

Further, it is unclear whether any leasable mineral activity would be permissible. On page 1, it is stated that the subject lands have been segregated from appropriation under the mining laws and, on page 52, that minerals under the mineral leasing laws are not affected by the segregation. However, on page 122 it is stated that the area has been closed to mineral exploration. We suggest the apparent inconsistencies be resolved. If leasable mineral activity is possible, this issue should be addressed in much greater detail in the final statement. III-3

Henry W. Coulter

Acting Director

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

IN REPLY REFER TO:
1792 (370)

Memorandum

May 10, 1974

To: SD, Nevada

From: Acting Chief, Division of Recreation

Subject: Red Rock Recreation Lands E.I.S.

We are transmitting, under separate cover, draft EIS copies with editorial comments written on the margins and some written comments. These comments are for your consideration in developing the final EIS for the Red Rock area. These comments were all considered prior to passing the draft EIS on to the Departmental review office. Three items were amended immediately - discussions of sewage, drinking water, and inholdings. All other comments are to be considered in preparation of the final.

If there are any questions, please contact Wayne Boden at (202) 343-9353.

/s/ Darrell E. Lewis

Acting

[illegible] 1974
Las Vegas District Office
Las Vegas, Nevada

ROUTE	ACTION	INIT.	DATE
D.M.			
CH., R.M.		J83	
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STATE R.A.			
CAL. R.A.			
ESMER. R.A.			

FILE CODE____________

1 - ACTION 2 - INFOR

DRAFT

Comments on Red Rocks Recreation Lands Draft Environmental Impact Statement

GENERAL - An abundance of structural, stylistic, and grammatical errors appears in the EIS. These errors make the statement difficult to read and add substantially to the general lack of clarity contained in the statement's presentation. It appears that much of the material is needlessly repetitious, and that one could easily be confused as to which section one was actually reading.

Beyond any question of style, the Red Rock EIS does not provide a presentation of the pure facts involved in the Recreation Lands proposed action. Throughout (with the exception of the technical material provided in the "Description of the Environment" section) the EIS, it deals with value judgements and hypothetical situation-information that seems blatantly beyond any factural inquiry. Is this no more than a sales pitch for the proposed action?

In addition, the final section, which deals with alternatives to the proposed action, seems to have failed on two important counts. Firstly, alternatives, although explicitly compared to the proposed action, are neither unbiasedly described nor are they presented in such a way that they might be clearly understood and considered. Rather, this section serves, primarily to reinforce the proposed action and not to provide viable alternatives. Secondly, this section and each of the alternatives presented therein, assume that recreational use (and specifically outdoor recreational use which highlights the scenic opportunities of the Red Rocks area while providing road facilities for the motorized scenic observer) is the only viable land use action to be taken in this area.

It seems quite obvious[illegible] that other land use alternatives, such as closure for Wildlife reserve or for a Bighorn Sheep habitat, or development as a residential area should have been examined. It is not that these alternatives would or should be considered more appealing, but rather, that the EIS for the Red Rock area only provided recreation alternatives to the proposed action and not land use alternatives. (As discussed: Area Planning History)

Each of the above comments will be substantiated below by detailed references to the text.

Draft Summary - There is a discrepancy between the location of the Red Rock Recreation Lands as listed in the Draft, i.e., 13 miles west of Las Vegas and P. 1, Description of the Proposal, i.e., 15 miles west of Las Vegas. I-1

Description of the Proposal - Because of the close proximity of the Red Rock area to Las Vegas and because the 1969 study indicated that 75% of users stayed less than four hours (p. 57), I would question the need to build five camp units as proposed in the development sites on the chart (p. 8).

I would also tend to question the development, as proposed, on the basis of the overlap with existing recreational facilities in the area. (p.10.)

Description of the Environment - The bottom two lines of p. 25 repeat on the top of p. 26.

I think that it would be valuable to try to provide any available information of the projected impact of increased residential and commercial expansion beyond the present city limits of Las Vegas towards the Red Rock area. Beyond effects on the air quality (p. 31), it would seem that such growth might encroach on the environmental stability in the Red Rocks area. **III-17**

There is a word or line missing near the bottom of p. 50. What would the effect be on the watershed if the litter element of the hydrolic cover were removed? (p. 51) **III-5**

It is unclear whether the proposed action would adversely affect the critical erosion areas at specific locations within the watersheds, (p. 52). **III-5**

The first full sentence on (p. 55) is poorly constructed.

Is recreation use in the area limited ONLY by a lack of facilities?

It is unclear why, since two visitor use studies were completed in the area, one of them (1969) included considerable data collected within the area. Where did the rest of the material come from, and what was the basis of the 1967 study? **IX-7**

Why are you developing an area, based on 600,000 annual visits to the Red Rock Canyon, if 90% of the visitors were sightseeing from an automobile? Why not just put in traffic lights? (p. 55)

The proposed action should also be questioned on the basis of the northwestern and western growth trends of the Las Vegas Valley.

The EIS is very inexplicit about the other State and Federal agencies which have direct or indirect controls on the Red Rocks area. What are the agencies, and on what basis, and to what extent do they exercise control over the area, or parts thereof. I-12

The relevance of the last sentence on the bottom of p. 73 is not made clear.

Environmental Impact of the Proposed Action - The effect of visitor use of of the soil (p. 81) is vague.

The adverse impacts of the proposed action on the Bighorn Sheep, P. 86-88, seems extraordinary. III-10

Would the 2,500 acres of primitive land which would be lost if the proposed action is implemented (p. 91) be in addition to the 13,000 acres of Bighorn Sheep habitat affected by the proposal? Is there an overlap of these affected areas? III-23

The last sentence on page 98 is grammatically incorrect.

Mitigating Measures-Included in the Proposed Action - What means would be used to promulgate and enforce visitor management regulations as provided for, e.g., Soils (1) p. 102. IV-12

It seems infeasible to check each visitor's mode of transportation for current official Exhaust Emission Control Standard certification as suggested (2) on top of page 104. IV-1

If developments are not allowed to exceed the design standards identified in the development plan (p. 108, §2) would there be the possibility of enlargement of the facilities where it was deemed necessary. I-1

If the large majority of visitors to the Red Rocks come from the Las Vegas and Clark County areas, wouldn't it make a great deal of sense to try to disseminate visitor information in the home areas of the visitors. IV-13

Any Adverse Effects Which Cannot be Avoided Should the Proposal be Implemented-

Under the Wild and Free-Roaming Burros section (p. 115), the first two sentences make no sense at all. How can the EIS try to measure the losses in archeological values in terms of a loss of human interest values—sounds unmeasurable, subjective, etc. V-1

Alternatives to the Proposed Action -In terms of structure and format of the Alternatives section, consideration of the mitigating measures, (as provided for p. 123) which could be applied to each of the alternatives, is noticeably lacking. In addition, the Residual Adverse Effects Which Can Not Be Avoided, sections are provided only for alternatives II and III. As a result, the alternatives appear as incompletely described proposals. There is inadequate information upon which to base any considered judgment.

The provision, Levels of Management, p. 124, is unclear in terms of both sequence and meaning.

Why, in Alternative I, would the lack of the section of road between White Rock and La Madre Canyon necessitate a decrease in visitor management control (top p. 127)? Is there no way to organize management to provide comparably effective control without this road?

The Aesthetics section, (p. 133, p. 144) concerning road construction environmental impacts in La Madre Canyon is unclear and misleading, particularly with reference to its explanation of the original proposal.

On pages 134 and 145, the environmental impacts of the alternatives, in terms of fire fighting in the back country, is incomprehensible.

Last paragraph on p. 134: "fewer" and not "less" dollars.

Someone should look up the word "inpacked" in the dictionary, (p. 138, p. 150).

All but the first sentence in paragraph 3, page 138, should be cut as irrelevant to Alternative II.

Is it desirable to justify the adverse effects of Alternative II in terms of the lack of roads for pleasure-driving, which would have been provided in original proposal? (p. 141)

Do you want to provide a natural recreation area or do you want to build roads near scenic resources? At the bottom of page 144, the scenic experience is more "enchanting" on foot than from the window of a car and on the top of page 145, not being able to enjoy a scenic drive in an air-conditioned car becomes an adverse impact of the proposal? What do you want to provide?

Any resemblance of the EIS being a factual statement is destroyed by the second half of paragraph 1, p. 156. How can one predict a measure the public's "venting" of its hositilies in existing facilities. Additionally, this presentation implies that if the proposed action is taken rather than this alternative, there will be no such problem. How can one say that? (Again, on p. 173)

How can there be adverse impacts resulting from over-use and visitor overflow (top, p. 164), if there will also be benefits because of a reduction in traffic volume, (Air quality section, p. 164)?

(Under Minerals section, p. 165), Why will there "undoubtedly" be increased demands for removal of sand, gravel, etc.? This part is not clear.

How will auto fumes decrease (p. 164), at the same time that noise and odor from vehicles will increase (p. 169)?

March 3, 1849

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

IN REPLY REFER TO:
1792 (350)

Memorandum

June 22, 1973

To: Chief, Division of Recreation

From: Chief, Division of Watershed

Subject: Red Rock Recreation Lands EIS

This statement is well prepared. There is one important factor that is only lightly covered and that is visitor management control. The statement should define what positive measures will be taken to control people use. The establishment of rules and regulations are of little value if they are not enforced. IV-12

We would also recommend that as a minimum the user fees support the annual maintenance costs.

Enclosure

IN REPLY REFER TO:

1792.2 (510)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

JUL 9 1973

Memorandum

To: Chief, Division of Recreation

From: Chief, Division of Budget & Program Development

Subject: Red Rock Recreation Lands - Draft Environmental Statement Review

In a recent discussion between Mssrs. Boden, Gerke and Carter, several minor points which were raised and noted by Wayne Boden have not been included.

Our other comments on the environmental statement are as follows:

1. The statement is well organized.
2. It is questionable whether or not the original master plan should have been revised to reflect past public criticism of certain parts of the plan (e.g. Deletion of Crestline and Brownstone Roads). We have no objection to this approach because Nevada is after the broadest possible public input to determine what, if any, master plan changes are necessary.
3. There is an apparent conflict between page 89 (petrified wood collection) and page 90 (collecting).

   Page 89 "Recreational collecting of petrified wood is identified as an acceptable activity." II-55

   Page 90 "no collecting of plant, rock or mineral specimens would be allowed in the area."
4. Providing most of the suggested changes are minor, we recommend that the Washington Office make the necessary revisions.

1792(220)

Memorandum

To: Chief, Division of Recreation

From: Chief, Division of Environmental and Planning Coordination

Subject: Draft Environmental Statement for the Red Rock Recreation Lands, Las Vegas, Nevada

The draft statement is well organized. The matrix system used to describe various alternatives is very helpful. A summary matrix would be helpful.

The tone and discussion of impacts of the various alternatives makes the statement appear to be a justification paper. The alternative impacts are quite repetitive in nature and with a matrix system ~~only~~ need to be referred to after once being described. Many of the impacts referred to in any one alternative would apply to the rest of the alternatives and proposed action.

Wildlife throughout the statement has not been given equal attention. The statement indicates no professional BLM or outside staff was involved except a university ecologist. However, wildlife values play the second most important [illegible] ~~alternative~~ to the [illegible] ~~area~~ outside geologic formations.

Life histories, limiting factors, biological and non-living habitat requirements of the major wildlife species should be discussed or appended to the statement. Impacts of each alternative needs greater attention.

APP. III

Specific Comments

Paragraph 2, page 18. Ground Water - There appears to be sufficient data available to determine the quality of ground water instead of indicating it is now being used for human consumption. If the ground water has not been analyzed it would appear to be simple effort to gain access to several samples and have them analyzed. II-25

Paragraph 4, page 25. It would be desirable to include common names as well as scientific ones. II-27 Throughout the section on vegetation it would be helpful to explain the major uses of the vegetation and vegetative communities. The community trends and vigor , stage of succession and productivity has not been discussed.

Page 40. Wildlife. See previous comments.

Page 49. Livestock. This aspect needs to be explored in depth. Livestock use is now limited and grazing rights are not being utilized. In view of the general incompatibility of range livestock with large numbers of recreationist unfamiliar with range stock it may be desirable II-37 to eliminate all range use of the area now. It is also quite possible to encourage large predators in the area to keep burros and other wildlife in balance. Such predators would on occasion kill livestock and add to the livestock ~~including~~ [illegible] cry for predator control.

Page 63. This paragraph appears to be a ~~mess~~ full of contradictions. e.g. No pressure for development, development for speculation, transfer of National resource lands to private, a need for public recreation, etc.

Paragraph 3, page 80. Ground Water. This impact appears to be compounding a critical regional water shortage - Las Vegas now withdraws more water than the replenishing rate and is faced with a critical water problem. This needs to be discussed. The amount of water to be used appears low for an area which will have over 6000,000 recreationist. III-7

Paragraph 2, page 86. See previous comments.

Page 90. Target Practice. Target practice area could be made compatible in an area of 64,000 acres. Rifle, skeet, or pistol range next to a large urban area would reduce vandalism and add much to an intensive recreation area. Joint agreements could be arranged with NRA, State Fish and Game Commission, and sportsman groups. IV-7

Paragraph 2, page 91. Crestline Road and Brownstone Road should be discussed in greater depth since they will cause the most significant environmental impacts. A separate subsection may be desirable. It is our impression after discussing the Red Rock plan with State Office and DO that these roads are unacceptable. Thus, why are they included in the plan? A more vigorious discussion and documentation of these features are needed, including the environmental impacts on both the living and non-living components of the environment. The social implications and the right for future generations to determine ~~these~~ wants, desires and needs should be explored, when considering these features.

Mitigation Measures. This section needs considerable quantification and documentation. Several of the proposed measures seem to have environmental impacts of their own which may be more significant than the action. e.g. Water and sewage aspects in an already overloaded Las Vegas situation. e.g.Who will pay for increasing Las Vegas sewage system, etc.? III-7

a. Wildlife Mitigation. Why do we want to maintain existing population? This has not been documented. Why settle conflicts between hunting and observation in favor of observation? (Population Control) no large predators in the area now.

Paragraph 2, Page 105 b. Funding Is funding available to provide staff naturalist and enforcement personnel to protect 64,000 acres? II-56 Recent budget trends do not indicate this amount of capital available - Is this really not wishful thinking?

c. Wild Burros - How will this animal be controlled and managed? IV-7 They have also been known to conflict with recreationist and could be a human danger source.

c. Livestock - See previous comments

Alternatives. See general comments

Paragraph 1, page 131. Consideration has not been given to increased quality, road design and traffic control to reduce hazards. IV-16 Other access areas could be developed, and forego this one.

Human Safety and Fire Control. This aspect throughout the alternative section appears overplayed. Unless this can be documented and quantified II-58 it may be desirable to eliminate it. How many problems exist with 600,000 people using the area? How many search and rescue II-27 operations, cost, number of fires, why control fire, etc.?

Paragraph 2, page 132. Why would primative characters be any harder to maintain ? Restr~~ucture~~rict use, permits and adequate patrolling would help eliminate most problems and is now being used by other federal IV-12 and state agencies.

Paragraph 3, page 134. There is no documentation that less use would occur or that any of the aternatives or planned action would have a noticable impact on Las Vegas economy. The use will come primarily from Las Vegas residents since the figure now a day type use. III-22

Paragraph 2, page 138. Limited or reduced development benefits may be affected by wildlife benefits and quality increase of the experience. Therefore material should document this funding.

Paragraph 3, page 139. The concentration of day use people in a smaller area makes supervision easier. Those wishing quality experience – to get away from crowds – generally cause less vandalism and thus need less supervision. – Document finding as presently given. IV-13

Page 140. Disagrees with summary matrix.

Page 141. This would add to a quality experience in the 18 mile hike. The major views could still be seen from the bottom and other planned roads.

Page 142. See previous comments

Page 143. See previous comments

Page 145, 146. Is BLM trying to encourage this form of recreational experience of an air conditioned car to appreciate the outdoors, or are we trying to encourage man to nature? Is it the intent to develop an area to the maximum people carrying capacity or a quality experience? If it is the first it would be better to have a multi-story building in Las Vegas for various forms of recreation. I-1

The statement expresses concern that handicapped people without a road could not enjoy all the benefits without a large road system. However, are we trying to cater to all groups? There is no mention of trails for the [illegible] ~~retired~~, etc.

Table 2 appears to have errors in topagraphy, soil, wildlife primative area, urban sections as compared to base and text.

Page 151. See previous comments on Intensive ~~of~~ use - less people, higher quality, and less environmental impacts.

Pages 152,153,154,155. See - wildlife - also comments about impacts not beeing discussed that apply to all alternatives.

Pages 156,157,158. See quality experience and previous comments

Table 3 Matrix appear not to concur with Text, each matrix should be checked.

IN REPLY REFER TO:

United States Department of the Interior 1792 (321)

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

JUL 2 1973

Memorandum

To: Chief, Division of Recreation

From: Chief, Division of Lands and Realty

Subject: Review of Red Rocks Draft Environmental Impact Statement

We would like to offer the following comments:

1. On page 31, can anything else be said about the existing air quality except that it is "good." If specific measurements of particulates or aerosols are not available, say so. Then the apparent indicators of good quality - vision, etc. can be described. II-3

2. The second paragraph on page 52, should be more descriptive of what the classes of "moderate to slight" are. It should say what classification system is used to judge the condition. It would then be more meaningful to a non-Bureau of Land Management reader. II-18

3. The sentence beginning on line 9, page 84 which says the Bureau would have to get building permits from the county for its improvements at Red Rocks seems inconsistent with past Bureau construction practices. Is this a correct statement? IV-1

4. On the last sentence, page 92, add: "as discussed at the top of page 84."

5. The amount of indentation for specific headings under Mitigating Measures, page 99 thru 113 is erratic and not uniform. Especially confusing is the Wildlife section. The use of underlined headings is not consistent in this part.

6. On page 116 under timber add: "and the indescriminate use of woody vegetation for camp and picnic fires." III-15

7. On page 116, last line, is Stratography the correct word?

8. About pages 118 and 119. Briefly, short term use would:

    1. Benefit the recreation seeker and stimulate the economy and

    2. Reduce the wildlife habitat productivity and inhabitants.

    Long term productivity for recreational use would be expanded at even greater cost to wildlife values, perhaps to the point where intensive recreational use would destroy the recreational amenities. VI-1

    This part falters when discussing the long term productivity. What is discussed is presented in "economists jargon." It needs to be rewritten and presented in a straight foreward manner with at least a guesstimate of long term productivity.

9. On page 120:

    A. The "ify" kind of statements made under the Air heading should be replaced with positive statements. It seems that there is no doubt, the concentration of recreationists will incrementally decrease the air quality. III-1

    B. Under the Recreation heading in the second and third sentences there would be less "hedging" on the subject if the word would is replaced with the word must.

10. In the irretrievable and irreversible commitment of resources there is a tendency in all categories to hedge the subject like we are afraid to come out and admit that something irreversible is going to happen. It is better to say the worst is going to happen than to have the Sierra Club make us say it later in an apologetic manner. VII-1

Rollo E Chandler

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

1792
(N-053)

4/16
4/16
4/17
4-18
R.K.J. 4/19

TO : State Director (N-911)

DATE: April 12, 1974

FROM : District Manager, Las Vegas

SUBJECT: Red Rocks E.I.S. Workshops

Four workshops on the Red Rocks draft E.I.S. were held on March 13, March 26, March 28, and April 4. In addition Frank Bingham attended an environmental class at the University of Nevada at Las Vegas, and John Boyles attended a meeting of the Red Rock Advisory Board. The Red Rocks draft E.I.S. was discussed at these two meetings as well.

Additional exposure for the E.I.S. was obtained through an interview of Frank Bingham by Channel 13-TV news and of John Boyles by Channel 5-TV news, as well as through news releases and tapes supplied by the S.O. Those persons and groups invited to the workshops by letter were contacted by phone prior to the workshops and invited again to attend.

Attendance by the public at the workshops ranged from zero on April 4 to a high of about 20 on March 26. On March 13 and March 28 about a dozen people attended.

Those attending were about evenly split between private citizens and persons representing groups or organizations. The private citizens were mostly college students. Groups represented included the Sierra Club, Nevada State Fish and Game Dept., Nevada State Park Advisory Board, City of Las Vegas Planning Dept., Fraternity of the Desert Bighorn, Nevada Wildlife Federation, reporters from the Las Vegas Sun and the U.N.L.V. newspaper. State Assemblywoman Jean Ford attended the March 26 workshop.

While there was some variation in the areas discussed, several comments and questions were raised at all of the workshops and meetings. These presumably were the more or less universal areas of concern at least among those attending. These included the following:

1. How Nevada State Parks fit into the picture vis-a-vis acquisition of the Krupp Ranch and Pine Creek as well as pending legislation to turn the Red Rocks over to the State. I-11/12

2. How the Master Plan was developed and by whom? How much outside participation was there in the plan and why wasn't it included as an appendix to the draft E.I.S.? IX-1

5010-108

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

3. Why Segment A was paved without an Impact Statement and why alternate routes to Segment B weren't discussed in the E.I.S.?

4. Much concern was voiced concerning the welfare of the bighorn sheep in terms of impacts due to opening the Crestline Road, developments near waters, etc. The problem of poaching along the Crestline Drive was also mentioned. III-12

5. In general, those attending the workshops and meetings were opposed to developments above the escarpment for a number of reasons including desire for wilderness, adverse impacts upon the bighorn sheep, damage to vegetation, soils, etc. through heavy use pressure, etc.

6. Many people including the representatives of the Sierra Club voiced their disapproval of the draft E.I.S. citing internal inconsistencies, vague language, lack of sufficient data, obsolete data, lack of discussion of alternatives, etc.

In spite of the negative aspects of the workshops, we consider them to have been successful in that people could come together, ask questions, and discuss problems in an informal atmosphere. It also allowed people to organize their thoughts, etc., so as to be better prepared to comment at the hearing or through the mails. We emphasized that we would appreciate comments not only on the statement itself but on the level of development desired. We expect to receive substantial, thoughtful, comments as a result of these workshops. We also obtained some additional data as a result of these workshops, including the existence of a band of possibly free-roaming horses in the Pine Creek Area.

John S Baylor

March 3, 1849

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

OREGON STATE OFFICE
P.O. Box 2965 (729 N.E. Oregon Street)
Portland, Oregon 97208

IN REPLY REFER TO:

1792 (911)

3/29
4/1

MAR 27 1974

Memorandum

To: State Director, Nevada

From: State Director, Oregon

Subject: Review of Draft Environmental Statement of Proposed Development of the Red Rock Canyon Recreation Lands, Las Vegas, Nevada

The subject draft represents a fine effort to assess the environmental impacts of the proposed development. However, in spite of the amount of work evident in this draft, we feel it needs to be more specific and informative in the subject areas as outlined in our attachment.

The Oregon State Office staff thank you for the opportunity to provide commentary toward your final draft.

Archie D. Craft

Attachment

Proposed Development of the Red Rock Canyon Recreation Lands

WILDLIFE

It is agreed that small mammals, reptiles and birds may occupy small individual home ranges; however, the impact of the proposed development could eliminate them. Displaced individuals cannot always find suitable niches. Human population pressure may be expected to operate against these species as anticipated for the desert tortoise (p.85). III-10

The section on relationships between short-term and long-term uses might discuss more specifically the impacts occurring during the construction period and relate them to the longer term impacts which remain after project development. For example, the prairie falcon (p.85) might abandon the area not only during nesting, but over the long-term as well. Some small animals and birds, displaced during the construction, may become more abundant following campground establishment. III-12

ENDANGERED SPECIES

The statement under Mitigation - Wildlife (item 9.1, p. 105) that "proposed developments in areas of critical habitat for rare or endangered wildlife would be mitigated to the extent of technical feasibility" may not be strong enough. IV-7

Attention is called to P.L. 93-205, dated December 28, 1973, known as the Endangered Species Act of 1973. Section 7 states in part that Federal agencies shall take "...such action necessary to insure that actions authorized, funded or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species...." IV-7

AIR QUALITY

It is unfortunate that the impact of development on air quality is "unknown at this time" (p.83). It would be helpful in the decision making process to have an estimate of the impact of full use of the area by an increasing number of tourists (an estimated 600,000 in 1972); the majority of whom (possibly 90%) use the area to sightsee from an automobile (p.55). The exhaust fumes and dust raised by extensive automobile traffic could be a significant factor (especially when viewed in conjunction with the nearby Flintkote factory dust output, 3,600 hours of atmospheric inversion annually, and increasing Las Vegas air pollution) in determining an acceptable plan of development. III-1

ENVIRONMENTAL IMPACTS

The environmental impact section would be enhanced by inclusion of specific information. For instance, "... road construction would impact natural drainage patterns and landforms" (p.79); "... the total area of development would be small when compared to the total area of the recreation lands" (p.80), and "... construction activities in the Red Rock area may directly affect approximately 750 acres, and the soils on the construction site would be altered...." do not leave the reader with a clear impression of the actual impact. III-5

Description of the economic environment (pp.75-77) generally summarizes Clark County income and employment. Economics are not again mentioned in the remainder of the statement. An account is not made of the economic impact of the proposed development and the statement seems incomplete without it. III-22

ANTIQUITIES

It has been noted that one way to help preserve archeological sites is to allow access to them by foot only. For some reason, mobile access goes along with destruction of these sites by gunfire and pillage. Perhaps this could be considered in the road plan. A four-foot chain link fence, as suggested in the proposal, would probably not deter serious vandals and would detract from the natural archeological setting. IV-9

ALTERNATIVES

The tables (p. 135 etc.) that propose to show "the overall difference between the alternative and the proposed action" may do as they say, but viewed alone are misleading and do not offer a fair comparative evaluation of the impacts. The ..."differences are shown as beneficial (better) or adverse (worse) than the proposed action", not evaluated on their independent overall environmental cost and impact. It is suggested the tables be supplemented by companion tables that reflect a more realistic value of each alternative.

Have you considered as an alternative the possibility of increased patrol personnel to maintain the existing attractive qualities of the area without further development? I-1

april 22, 1974

The following are comments made by Las Vegas District staff members or obtained at the Red Rock EIS workshops. Some new information obtained at these workshops is also included.

It is suggested that these comments and data be considered during the preparation of the final E.I.S.

1. The recreation management plan for the Red Rocks should be included as an appendix to the final EIS. APP. II

2. New soils and water data should be included. II-14 II-20

3. Resolve conflict over permissability of collecting petrified wood (pages 89 & 90). The occurrance, mode of formation, significance etc. of petrified wood should be discussed under "Minerals" and "Geology". II-55

4. Change "insipid agriculture" to "incipient agriculture". (page 66). II-44

5. Clarify the "increased demands to allow sand and gravel mining" in the area (pages 129 + 165). III-4

6. Note that the Crestline road would open the area to increased poaching of bighorn by giving cars increased access into the area. III-13

7. Rework Table #1 (p. 124). Alternative #5 is incorrect in that more development is shown than for even the proposed action. La Madre Canyon is listed seperately and then again in combination with Red Rock Canyon! What does the "La Madre Canyon & Red Rock Canyon" heading signify in terms ~~to~~ of location, area, etc?

8. The caretaker of the Pine Creek area has reported the existence of horses in the Pine Creek - Krup Ranch area There is the possibility that these horses may have to be considered "wild horses" since they may be unbranded and the claiming period has closed. There is no discussion of wild horses in the EIS. II-35

9. An albino bighorn ewe has been seen for three seasons in the Red Rocks.

10. The EIS should be brought up to date in terms of State aquisition of land, impacts of Segment A, presence of Ranger patrols, ~~to~~ developments at Bonnie Springs etc.

11. Maize is spelled with a "Z" (page 64, line 17) Also on the same page (line 22) it is doubtful that Agave formed a large part of the diet of these people as only one small species occurs sporadically in the area.

12. The agave found in the area is *Agave utahensis nevadensis*. This subspecies is endemic to the

Spring Mtns of Nevada and the Ivanpah, Clark, and Kingston Mtns in California (Breitung, 1968, The Agaves: Cactus & Succulent Journal, 1968 yearbook, 107p.). II-29

13. Two species of Cactus (*Opuntia charlestonensis* and *Coryphantha rosea* which are reportedly endemic to the Spring Mtns (Bradley & Deacon, 1965, The Biotic Communities of Southern Nevada: D.R.I., U.N.L.V. preprint series #9, 86p.) probably also occur in the Red Rocks. Both species grow in the juniper plant-zone. II-29

14. The statement is made under "Timber" (page 109) that "Transplanting of native trees would be encouraged..." This statement should be clarified. Replanting or reseeding is what is presumably meant. IV-8

15. The cardinal (page 47) was reported as a first sighting in the Red Rocks by Austin & Bradley (1971, The Avifauna of Clark County, Nevada: Jour. of Ariz. Acad. of Science, Vol. 6, #4, p 283-303) APP. III

16. Flood hazard data for Red Rock Wash and a discussion of this hazard should be included. II-26

17. Photos of major features, important sites, vegetative types etc would be helpful in understanding the data presented in the statement. APP. II

18. A BLM Ranger has sighted on several occasions

a herd of approximately 15 feral burros (p.48) in the southern portion of the area near the Blue Diamond Community Dump. II-35

19. The statement (p.49) that no [illegible] mountain lions exist in the Spring Mtns is inaccurate. Sign has been seen a number of times and one was shot near Mountain Springs in the Fall of 1973 APP. III

20. There should be more discussion of the area's caves in terms of location, formation, value, vandalism, etc. II-10

21. There is no discussion of ecological interrelationships which should be included. Several ecosystems exist – Mojave Desert (creosote bush community to Joshua tree community, piñon-juniper, riparian & spring, relict community at Pine Creek, etc. II-37

22. A partial list of invertebrates can probably be assembled including insects and other arthropods, possibly some molluscs etc. Reports of fairy shrimp in the rain pools on the scarp etc. APP. III

23. Other comments have been noted in the margins of the EIS that was circulated.

– Robert J Sulencki
4/23/74

NEVADA STATE PARK
NATURAL HISTORY ASSOCIATION

ROOM 221 NYE BUILDING
201 SOUTH FALL STREET
CARSON CITY, NEVADA
89701 882-7339

NHV
3/18

3/22

March 14, 1974

Mr. E. I. Roland
State Director
Bureau of Land Management
300 Booth Street
Federal Building, Room 3008
Reno, Nevada 89502

Dear Mr. Roland:

We wish to thank you for allowing our Association the opportunity to review and comment on the draft environmental statement for the Red Rock Recreation Lands. Most members of our board are also members of the State Park Advisory Commission or are employees of the Nevada State Park System, therefore, our comments will be made through those groups.

Sincerely,

Eric R. Cronkhite
Executive Secretary

Marshall Humphreys

By: Marshall Humphreys
Business Manager

ERC/MH/bc

MIKE O'CALLAGHAN
GOVERNOR

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COLORADO RIVER COMMISSION
OF NEVADA

P.O. BOX 1748
LAS VEGAS, NEVADA 89101
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April 2, 1974

Mr. E. I. Rowland
State Director
U. S. Department of the Interior
Bureau of Land Management
Room 3008 Federal Building
300 Booth Street
Reno, Nevada 89502

Dear Mr. Rowland:

We appreciate the opportunity to review the Draft Environmental Statement for the Red Rock Recreation Lands near Las Vegas, Nevada.

The Colorado River Commission's duties and responsibilities are set forth in legislative acts which pertain to water and power resources of the Colorado River. Additional responsibilities have been assigned through Federal and State legislation regarding the specific areas of the Eldorado Valley and the Fort Mohave Development Area. Therefore, we feel that other State agencies with more direct responsibilities regarding the area are more suited to provide comments. The staff of the Commission has no comments to offer.

Sincerely,

Donald L. Paff

Donald L. Paff
Administrator

cc: Mr. Elmo J. DeRicco
Director
Department of Conservation
and Natural Resources
Nye Building
201 S. Fall Street
Carson City, Nevada 89701

UNIVERSITY OF NEVADA, LAS VEGAS

Museum of Natural History

4624 Maryland Parkway South
Las Vegas, Nevada 89109
Phone: (702) 739-3381

April 18, 1974

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Mr. E. I. Rowland
State Director
Nevada State Office
Bureau of Land Management
Room 3008 - Federal Building
300 Booth Street
Reno, Nevada 89502

Dear Mr. Rowland:

Having reviewed the copy of the draft environmental statement which concerns the impacts of alternatives for development of the Red Rock Recreation Lands, I want to offer my comments on the proposal. In the light of a symposium held at the Denver Federal Center, April 11 and 12, conducted by the B.L.M. and National Park Service in collaboration with numerous other federal agencies, I would urge that emphasis be placed on Cultural Resource Management in the Red Rock area. The archaeological and historical values of this area are only partially known, but even on the inadequate data we have now, it can be predicted that numerous sites will need protection, preservation and perhaps salvage to mitigate the impact of developing this area. IV-9

I feel that the areas below the escarpment should have certain developments to allow the public to enjoy this scenic region, as completing the loop road through paving the old dirt road out of Willow Springs and establishing some more day camp facilities at Willow Springs, Sand Stone Quarry, and Red Springs. These areas already have heavy public use and need additional developing to provide facilities. I believe the area above the escarpment, as a primitive area without trails and other developments, should be maintained as such in order to preserve the beauties of the natural environment.

Sincerely yours,

Sheilagh T. Brooks

Sheilagh T. Brooks,
Professor of Anthropology
Chairman of the Department of Anthropology, UNLV

STB:sbt

UNIVERSITY OF NEVADA, LAS VEGAS

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4624 Maryland Parkway South
Las Vegas, Nevada 89109
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April 18, 1974

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4/2

Mr. E. I. Rowland
State Director
Nevada State Office
Bureau of Land Management
Room 3008 - Federal Building
300 Booth Street
Reno, Nevada 89502

Dear Mr. Rowland:

IV-9

The proposed developing of the Red Rock Canyon Recreation Lands by B.L.M. has only indicated the necessity for survey and salvage archaeology. On the basis of new concepts in Cultural Resource Management, I urge the inclusion of impact statements which will develop management policy leading toward the conservation of archaeological and historical site areas. An example of the lack of cultural management is the roasting pits located near the Sandstone Quarry section which have neither been salvaged or protected and which are being eroded through heavy use. An even more obvious example is the destruction of the petroglyphs on the sandstone cliff faces behind Red Springs. There is no ranger present to guide users of this area and inform them of management policy for preservation of these irreplacable non-renewable cultural resources.

I would also like to call your attention to an area immediately adjacent to the Warner Hot Springs or the proposed Ramshead Development on top of the escarpment. This area is approximately 120 acres in Section 20, N^2 NW^4, and SE^4 NW^4 and has been requested by the Las Vegas Archers for a Mountain Springs archery range. After hearing of the proposed request for this land, I made a preliminary survey with my assistant and a photographer and recorded a series of unusually well-preserved roasting pits. The report along with the photographs has been submitted to John Boyles, B.L.M. Las Vegas District Manager. I recommend that this 120 acres be included within the Red Rock Recreation Lands as part of a primitive area above the escarpment that will be managed for the protection and preservation of its natural resources.

Sincerely yours,

Richard H Brooks

Richard H. Brooks, Director
Southern Branch,
Nevada Archaeological Survey

RHB:sbt

The Nevada State Museum

CARSON CITY, NEVADA 89701

Telephone (702) 882-7348

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Molly F. Knudtsen
Member
William Peccole
Member

Anthropology Department
April 19, 1974

TO: D.R. Tuohy

FM: Robert York

Subj: Comments on BLM's Draft Environmental Statement For The Red Rock Recreation Lands.

In regard to statements made concerning archaeological values (antiquities) I have no serious disagreements with the Draft EIS, except in one case, the area of antiquities mitigation as discussed on pp. 109, 110. On these pages it is suggested that an archaeological survey be conducted "prior to final design at all proposed development sites and along all road and utility corridors where development would take place." This statement expresses a "salvage" attitude (which is amplified in paragraphs 2-4 on p. 110) that is not an acceptable or an appropriate manner in which to deal with archaeological values given the proposed purpose for which these lands are to be set aside, recreation. IV-9

The known archaeological values in the subject area are not only very important from a scientific point of view but are also of a very visual nature (roasting pits, petroglyphs) that lend themselves to development and interpretation for the general public's edification. Proper stabilization, protection, and interpretation (thru signs and displays) of archaeological sites can only add to the public's enjoyment of this area. And, such a program of development of the archaeological resources is more than compatible with BLM's recreational use proposals for the Red Rock lands. This calls for a scrapping of the salvage theme as expressed on pp. 109, 110. What is needed is an archaeological research strategy for the Red Rock lands: literature search; field inventory of prehistoric & historic values; a program of archaeological excavation based on the literature search and inventory; interpretative report (suitable for publication); and finally significant sites chosen for stabilization and interpretation based on the above data. In other words, archaeology should be very much a part of the recreation plans for the area, not just something to "get around."

As the Nevada Archaeological Survey, Southern Branch, under the direction of Dr. Richard Brooks has already completed an initial survey of the area (1967-69) it is suggested that the BLM negotiate with the NAS, Southern Branch, for a comprehensive archaeological research program, such as the one outlined above.

STATEMENT OF THE NEVADA OPEN SPACES COUNCIL AT A PUBLIC HEARING ON A DRAFT ENVIRONMENTAL STATEMENT FOR THE RED ROCK RECREATION LANDS AT LAS VEGAS, NEVADA, APRIL 26, 1974

The Nevada Open Spaces Council is concerned with study and education efforts to a broad spectrum of environmental issues in Nevada and the Southwest. Land management is one of the issues of particular concern to our organization. We see Nevada as especially fortunate in the number of areas deserving of protection that are still within government control. The Red Rock Recreation Lands, however, have a special place in our concern. Its unique values have been too well documented to need repeating in this statement. They were recognized by citizens as early as 1964 when a Sierra Club report recommended the area's protection as a national monument. The national significance of the area and its unique resources, which would have been appropriately recognized by such classification, is even more firmly established today. The essence of national monument management is protection of natural values, and we believe that this principle should be paramount in any plan for development of the area. Indeed, the concept of development in such an area implies its use as a tool in the preservation of resource values. It implies allowing visitation in ways that are in harmony with the environment and respectful of the special significance of its resources. It implies that adequate levels of management are likely to be far more important in any master plan than physical facilities which clash with natural values or compete with them for attention. The proximite of Red Rocks to Las Vegas in no way alters these concepts. It merely challenges the resolve and innovation of management for preservation in the face of potentially greater impact. It does not provide a reason for yielding to what we believe are largely imaginary pressures for non-conforming developments.

The failure to give more than lip-service to these principles was the major error in the 1968 master plan. It accomodated access and use at the expense of priceless resources. The adverse impacts included changes, in many cases permanent, to topography, water, soils, vegetation, wildlife numbers and distribution, primitive values, aesthetics, antiquities, and scientific values. The suggested alternatives are inadequate improvements. They are, we believe, the wrong alternatives to a bad plan.

PAGE REFERENCE COMMENTS

1. It appears to us that too much is left out of the EIS to adequately set the stage for evaluation. Forinstance, what is the philosophy on which park goals are predicated? What forms of recreation are to be encouraged at Red Rocks? These were discussed in the 1968 plan but are inadequately covered in the EIS. I-1

2. Pg 49,50: The acquisition of Spring Mt Ranch should be discussed here and on Pg 61 the discussion needs updating relative to F. Jones' withdrawal of the zone change application. Also, acquisition of Pine Cr by the State needs discussion. I-12

3. Pg 48: In addition to burros, how about the "wild(?)" horse herds at Red Rocks. II-35

4. Pg 3 (Map #2 & others of the Red Rocks): Would benefit by a scale of miles.

5. Pg 65 (Map #10): Several additional mescal pits are strung along the limestone ridge and are not shown.

6. Pg 30: Erosion forms and natural water impoundments are minor but significant geological features. For instance, the natural bridge on Bridge Mt and the giant potholes here and elsewhere where water is semi-permanent. II-10

7. Pg 67 (Aesthetics): The valley floor is an improtant aesthetic feature as foreground for the escarpment and has contributed to the grand sweep of vistas, especially from Cottonwood Valley northward. Thus the valley floor north of Hy 16 to Bonnie Springs has merit. It is difficult to separate the floor from the bluffs, since each impacts appreciably upon the other. II-65

8. Pg 71, 72: The new county Open Space ordinance is not mentioned as a potential tool for relieving pressure on Red Rocks in a suitable buffer zone. This comment also pertinent to Pg 112. II-61

9. Pg 74,75: The potential impact on Red Rocks from California people driven from damaging activities nearer their homes by higher protective measures in California needs discussion here. III-20

10. Pg 79: No mention is made of State acquisition of Spring Mt. Ranch's water rights. Also, what about possible adverse impact of springs drying up due to pumping? What is the quality of water from wells? II-20 III-7

11. Pg 99: The use of water from springs only when other sources are not available does not assure that ecosytems along water courses are not degraded. It only means that it is less likely. IV-4

12. Pg 100: Needs discussion of any mitigating measures for preventing adverse impact on springs due to pumping.

13. Pg 102: What about mitigating measures to prevent destruction of land and vegetation due to the indirect effects of construction; ie, increased visitor use-impact surrounding developed sites? IV-6

14. Pg 106: Mention needs to be made of wild horses as well as burros and the problems associated with the Wild Horse and Burro Act as a result of range depletion. IV-7

15. More than 2500 acres is affected, if indirectly, by potential high visual impact of the crestline road from within neighboring primitive areas. III-22

16. Pg 124: The table doesn't really explain the degree of management for each alternative since this depends on the number of units, number of rangers, and many other factors. But these are extremely important parts of the proposal and each of the alternatives.

    Full development should be defined, though it apparantly means development the same as in the proposed action. "Limited development" is defined one way in the EIS. Our idea of limited development contains a different mix of development sites and level of development at each one (see NOSC proposed conceptual plan in next section). VIII-1

17. Pg 130, 141: We believe that failure to satisfy all demand for driving for pleasure is more than compensated by richness of experience in the absence of the automobile. Natural area resources are not very compatible with mass-use which provides, in our view, only a superficial experience that is not worthy of the permanent disfigurement of the resource to accomodate this type of use. Opportunities exist east of the escarpment for some accomodation for driving. VIII-30

18. Pg 132: Why would the primitive character be so difficult to maintain? It is done other places by the restrictive measures mentioned, and these are generally accepted by the public as necessary (reference some of the Sierra Nevada USFS areas). VIII-39

19. Pg 131: No development level will satisfy demand, so why not concentrate on the long term needs for protection of the resource. Also, if demand is so great for high levels of development, where were the people who demand this sort of thing during this and earlier public hearings and meetings on Red Rocks? We feel that their absence is indicative of the superficial interest they have in use of the area. The cost of extensive developments for superficial ends seems unjustifiable.

20. Pg 134: Why is reduction of economic assets due to a limitation on development considered an adverse impact? Aren't we evaluating the impact on the resources rather than community economics?

21. Pg 135: With respect to the table and other similar ones, doesn't the acquisition of inholdings by the State eliminate any concern for the AUM potentialities? In any case, we do not consider the loss of AUM to be anything but a benefit at Red Rocks.

22. Pg 143: "Primitive area used to death." We object to the inference that control measures could not mitigate against such damage in those alternatives that would maintain primitive lands west of the escarpment.

23. Pg 147: We disagree with Table II that noise, odor and water quality effects would be slightly adverse and that recreation would be highly adversely affected relative to the proposed action. Quality of experience would be highly benefited as would the resource itself.

24. Pg 144: We heartily endorse the first paragraph under "aesthetics".

25. We disagree that people "would have to camp out" in the use of the primitive area. "Could camp out" is more like reality. The primitive area can be day-visited as is frequently done now. Open fires in back country areas are unnecessary even when camping. Several examples in which open fires are prohibited exist, notably in Grand Canyon and Yosemite wilderness areas. The same could be true in Red Rocks.

26. Pg 154: We disagree that the object of loops should be to move people through the park. We look on all roads as access routes for one reason or another. Bus or other public conveyance serves a purpose of substituting for large numbers of cars and in this use has considerable merit. It would be good if cars could be eliminated and all travel be by foot, horse, bicycle or public conveyance.

27. Pg 162: Perhaps here is a point to interject discussion of currently observed deterioration under the recent levels of management that would continue under this alternative, assuming no additional mitigating measures: fires on the pine groves on the buttes and at Lost Creek, proliferation of pathes through the vegetation at Lost Cr and increasingly at First Cr, littering, rolling of boulders off the cliffs into the canyons to the destruction of trees and brush below, cutting of juniper near the knoll at the mouth of Oak Cr, desecration of the little grotto pool and waterfall below the mouth of First Cr, and vandalism of the cave in Blue Diamond Hill, as examples. We agree that this alternative would not protect the area, but we also believe a lot more management measures could be applied without additional facilities, such as the hiring of additional rangers and closing access roads into fragile areas to autos.

28. We disagree with the statement on Page 163 that open space category contributes little to community needs. This sort of area is more desperately needed the more our citizens are forced to live in artificial environments of asphalt, steel, neon, alien odors, social pressures and the like. All the more reason to cherish the pure open space category as close to the metropolitan areas as possible and to be glad that we still have that decision possible in the growing Las Vegas area.

PROPOSED PLANNING CONCEPTS FOR RED ROCKS

The NOSC would characterize these ideas as fitting an alternative of limited development east of the escarpment and primitive development west of the escarpment face.

We offer two comparisons to illustrate concepts we think are important at Red Rocks. The historical experience at Yosemite Valley is, we hope, in contrast with what we will find at Red Rocks. Over the years, the valley was over-developed and the driving public was accomodated until it vecame obvious that changes must be made. Now attempts are being made to eliminate commercial developments and to substitute "elephant trains" on one-way roads in place of private automobiles and parking lots. We still have an opportunity to avoid this kind of mistake at Red Rocks by down-grading the importance of the auto and its unsightly and damaging roads that could intrude upon the open vistas of the park. Segment A of the loop road is an example of this kind of obtrusiveness where the cuts on the alluvial slope are to be seen from any number of places farther south in the Red Rock valley and from the higher vantage points on either sides.

The second comparison is with Pt Reyes National Seashore. This park is comparable in size to Red Rocks (slightly smaller). It also lies within easy access of a huge metropolitan area. Yet the park has been deliberately developed to minimize the heavy impact that might have resulted from this fact, even though land acquisition there ran to over 50 million dollars by contrast with the $3.5 million spent at Red Rocks. Roads have been eliminated from the entire southern end of the park and the few small campgrounds in this section are hike-in types which accomodate very few numbers of people. Others can hike its trails but must come back out at night. In this way the fragile ecosystems are given maximum protection and the experience is enhanced considerably. The important thing is that this was done with the approval of a nearby dense urban population who realized this policy would severely restrict their apportunities for camping there. At wilderness hearings we understand that all levels of government were in complete support of the wilderness designation for a large portion of the park. This was in an area where demand for camping opportunities always exceeds the availability of camp sites. Indeed, only one small state park is to be found within scores of miles of the Seashore.

At Red Rocks we see two principles that need to be applied. One has to do primarily with visual impact and the other primarily with fragile ecosystems. The valley east of the bluffs is visible its entire length from most any point in it or from vantage points surrounding it. It is an important foreground for the vistas of cliffs and buttes. It should, therefore, be as absolutely free of roads and developments as possible so as not to mar these vistas. Such roads as are necessary should unobtrusively follow the periphery of the valley.

The ecological principle is that the canyons and their water courses are extremely fragile and rather limited in size and hence any heavy concentration of people and cars, however well thought out the facilities, will have a large impact on riparian ecosystems, including wildlife that utilizes the water. Parking lots, campgrounds and picnic sites designed to make these areas available to large numbers of people in rather restricted locations will, we feel, result in destruction of the areas. III-10

A combination of these principles applies to the ridge area. A road along the summit would bisect deer and bighorn habitat while becoming an eyesore, due to cuts and fills, most of the length of the park. III-10

Based on these ideas, we would try to keep the main camping and picnicing facilities east of the Blue Diamond/Charleston Blvd road and north of the Segment A loop. A study of the area may well show that opportunities exist for well-planned and unobtrusive picnic sites or camps on the lower slopes or nestled in the canyons of Blue Diamond Hill, from which vistas of the bluffs would be truly superb. They would, of course, VIII-32 have to be in carefully selected locations to reduce their impact. They would probably have to be dry camps or picnic sites, but desert dwellers should be able to adapt to hauling their water with them. La Madre Canyon and Sandstone Quarry probably will require camp or picnic developments. Sandstone Quarry is quite fragile, in our opinion, and its restricted area makes auto parking a problem. It seems that here it may be desirable to place the accent on walk-in camp or picnic sites, partly due to its location along a wash subject to flooding and parly due to the undesirable clearing of brush and the visual impact of autos if they are extensively accomodated.

Other studies may show the possibility of camp or picnic facilities in the park south of the State Hwy 16, where views of Potosi and the sweeping panorama up the Red Rock Valley would be impressive. We would hesitate to advocate development along the primitive road northward between Hwy 16 and the Bonnie Springs area, however. VIII-31

The canyon mouths are special concerns as noted already. There are already too many roads into these fragile areas and their improvement would bring adverse impact of a high degree from the parking areas and other physical facilities as well as from the great numbers of people who would be poorly controled there. We feel that the roads to all major canyons need to be closed to mechanized travel except for one road for administrative access to each canyon where this is felt to be a management necessity. It may not be, however. The road might be improved enough for ease of entry but could be made to appear as trail-like as possible to provide walking entry to the canyons. This restriction would eliminate some who would like to be able to visit these areas, but would not be too difficult for the majority. Lost Cr and Icebox Canyon would be quite easy of access if good trails were constructed. Many people who felt excluded would be those without incentive enough to make the little effort. We don't feel that it is necessary or desirable to accomodate all people in planning for the area. Special consideration for the aged or infirm might be made via public conveyance along one of the administrative access trails if it is thought necessary. VIII-31

Special study needs to be made as to the best of the several access routes into the Oak Cr area. The others need to be closed and hopefully replanted. The road into Pine Cr also serves Oak Cr via a branch southwestward. But the road to the west side of the hill just south of the mouth of Oak Cr would serve as an access point to both Oak and First Creeks. Study may show that this trail route in preferable. This road is an obtrusive one, however, since it elbows its way across the valley and was hideously constructed with little sensitivity to the terrain. Its terminal south of Oak Cr, however, has the advantage of not ending directly in one of the canyon mouthes, requiring a relatively short branch either north or south to Oak or First Creeks from the present terminus. VIII-31

The Willow Spring site lies along the access to La Madre Canyon and the Red Rock Summit Road. This may be a poor spot for a picnic or campsite and perhaps should be removed, but we are rather resistent to the idea of a new road into La Madre Canyon simply to accomodate this unfortunate circumstance. II-26

The Red Rock Summit Road is a potential problem if traffic becomes too heavy, but we object to new road construction over the summit because of the cuts and fills that would be required. For the time being, we think the Summit Road should be left as is for its present use. At a later date it might have to be closed or else public conveyance up to the pass substituted. II-26

The entire area west of the face of the bluffs and through the La Madre Ridge should be left primitive, we feel, with only trail construction or other primitive developments as necessary to protect the environment. Part of the Red Rock Valley between Hwy 16 and Bonnie Springs might also be kept primitive, perhaps west of the main primitive jeep road that runs through this part of the valley. III-22

Whether or not overnight camping is allowed in the park is a management decision that needs some study, but the proximite to the city seems to slant the use of the park towards daytime. Current law enforcement problems at night tend to point this up. What have other cities, such as Phoenix, done in their regional parks? In any case, positive visitor control is necessary, we feel. Visitor check stations need to be located at all entrance points. The visitor center needs construction at an early date, and an education and interpretive program begun as soon as possible to develope an appreciation for the area and its fragile resources. IV-12

The Council feels that the State Parks System should be deeply involved in the planning process in cooperation with the BLM and should contribute to the preparation of the final EIS. In this way, the recent state acquisitions become part of the overall plan and any possible conflicts in the event of a transfer, due to different development concepts, are resolved before that time arrives. IX-12

We feel that the Spring Mt Ranch should be utilized for small, appropriate conferences on a reservation basis, for nature study programs on a daytime or overnight basis in cooperation with the county school districts, as a historical museum, as a trailhead, and perhaps for limited picnic developments. It requires a study in itself, however, as to the way it will be developed and managed within the framework of the overall park plan. We can not overemphasize, however, our belief in the importance of Red Rocks in environmental education. IX-12

We feel that certain trails need to be given priority for construction where a proliferation of paths in fragile vegetation zones are developing. Examples are the grotto waterfall below the mouth to First Cr (where the road should be immediately closed at the highway), the route to Hidden Lake from Sandstone Quarry, and the access to the spring and the base of the lower waterfall at Lost Cr. Each development, as it is built, should anticipate trail needs to protect the immediate environment. A trail, following pretty much the established route, should be built from Red Rock Summit to the crest of the ridge if erosion or proliferating paths continue to develope here. The trails along the crest and along the bluff faces which are contained in the original master plan are fine as long as they are indeed trails and not for mechanized travel. I-6

The Council feels that Brownstone Canyon is another specail problem. We don't like the idea of a new road constructed to this area from within the park despite the administrative advantage of this idea in providing better visitor control and ranger patrols to the area. We would like to see it remain relatively primitive with a trail from Sandstone Quarry south of Turtlehead. Closure of the present primitive road from the private lands contiguous to it is probably necessary, but walk-in from a parking area near the park boundary would be a good idea.

Efforts should be made to acquire private lands contiguous with the east entrance to the park and in the vicinity of Calico Hills, as well as the Oliver Ranch. A suitable buffer zone must be sought through Open Space Zoning around the park, especially about Blue Diamond and between the park and the city. Negotiations should be undertaken to keep mining activities near the summit of Blue Diamond Hill out of sight of the park as much as possible. These ideas should be a part of the development plan. IV-14

Consideration should be given to making that portion of Segment A between Sandstone Quarry and the entrance to Rocky Gap a one way road, thus removing the concerns for blind corners and on-comming traffic and permiting the safe use of a bicycle lane. IV-16

Consideration FOR BICYCLES should be a part of road design, we feel, and bicycle use should be encouraged throughout the road system. Efforts should be made to have the proposed bicycle trail to Red Rocks along West Charleston Blved completed as soon as possible. IV-16

A public transportation system to replace the private automobile should be under study for possible use at Red Rocks. It has become successful at Yosemite where the passengers become free to enjoy the views and where a friendly and relaxed atmosphere replaces the cloistered one of the private auto. The public seems to accept this idea, and it has been said that its main problem has been in making people get off so that others can travel between points. It has merit in leaning away from the present complete dependence of society on an expensive, destructive and unecological means of getting about. VIII-32

Free-flowing water is a precious commodity in the desert. In the priorities on its use, wildlife and stream vegetation comes first, human consumption last and toilet and shower consumption doesn't fit into the picture at all, except from use of well water, and then only after careful study of the possible effects of pumping on the free-flowing springs. APP. II-2A

Segment B of the loop road needs study as to alternative routes, with the present Willow Spring access road definitely considered, including the impact on the environment if this road is closed and abandoned.

All developments, including roads and trails, assume adequate management staff on the job ahead of completion in order to control the impact of people on the environment. We consider this to be the first principle in management of the park. Anticipated levels of management should be a part of the master plan.

In summary, the Council hopes that the final park plan will consider resource protection to be the goal with visitor use and access restricted to the extent necessary to achieve that protection. Visitor enjoyment and education can be achieved within that framework.

Howard Booth
Howard G. Booth
Vice President
Nevada Open Spaces Council

ROUTE	ACTION	INIT.	DATE
D.M.			4-25
CH., R.M.			
CH., OPER.			
ADMIN.			
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L & M			
FIRE			
STATE R.A.			
CAL. R.A.			
ESMER. R.A.			
[illegible]		Rp	4/26/74

FILE CODE__________

1 - ACTION 2 - INFOR.

MIKE O'CALLAGHAN
Governor

THOMAS N. LAYTON, PH.D.
Director

The Nevada State Museum

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WILLIAM PECCOLE
Member

RB 4/23/74
Actg

April 22, 1974

E.I. Rowland, State Director
Bureau of Land Management
Room 3008 Federal Bldg.
300 Booth Street
Reno, Nevada 89502

Dear Mr. Rowland:

Enclosed is a copy of comments by Robert York on the Red Rock Canyon Recreation Lands. I turned this study over to Mr. York because prior to coming to the Nevada State Museum, Mr. York had a first hand acquaintance with the archaeology of the area.

Basically, I think Mr. York's comments pertain to the heart of the problem. That is, the orientation toward the archaeological values seem to be geared to a "salvage" effort, rather than toward a well-developed plan for conservation and utilization of the archaeological sites. While Mr. York recommends an "archaeological research strategy," I would not call it that. Perhaps it should be called a conservation and utilization strategy to interpret the existing archaeological values within the Recreation Lands. I agree with Mr. York that the survey should not be limited to areas affected by proposed development and construction, but should be an intensive reconnaissance designed to locate all sites, and to make recommendations to mitigate impacts upon them. In some cases, avoidance of values may be preferable to excavation.

IV-9

Sincerely yours,

Donald R. Tuohy

Donald R. Tuohy
Curator of Anthropology

The Wildlife Society

Western Section

Founded 1937

Bureau of Land Management
APR 18 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

April 15, 1974

Mr. John Boyles
District Manager
Las Vegas District Office
P. O. Box 3
301 E. Stewart Avenue
Las Vegas, Nevada 89101

Dear Mr. Boyles:

We, The Nevada Chapter of The Wildlife Society, would like to make the following position statement concerning the Red Rock Canyon Recreation Lands Environmental Impact Statement:

1. Based upon reading the draft Environmental Statement, it must be assumed that the great majority of people in the Las Vegas area are in favor of some sort of development of the Red Rock Recreation Lands. (However, no further recreational development would be best for wildlife.) Therefore, since some development is probably inevitable, future development should be done in a manner that will be most compatible with wildlife needs and cause the least destruction to the environment.

2. Rather than recommending any of the alternatives listed in the draft Environmental Statement, we suggest another alternative: Limited development below the escarpment with only primitive development above the escarpment. This is a combination of Alternatives II and III. Development could include a Visitor Interpretive Center below the escarpment. This suggested alternative would have the least detrimental effect upon the bighorn sheep which use the area above the rim more heavily than below the rim.

3. We are definitely opposed to any road construction above the escarpment because of the detrimental effect upon bighorn sheep movement and increased public access to their habitat.

4. Definite and specific plans should be outlined to insure that desert bighorn sheep have access to all of the natural and

artificial waterholes that they might wish to use - without interference from people.

Sincerely,

Donald J. Seibert

Donald J. Seibert, President
Nevada Chapter TWS
2052 Golf Drive
Elko, Nevada 89801

cc:
Fred Evenden
John Spinks
Jack Helvie
Dick Teague
Jim Yoakum
Don Klebenow
Willard D. Klinstra

ROUTE	ACTION	INIT.	DATE
D.M.			4-18
CH., R.M.			4/19
CH., OPER.			
ADMIN.			
RANGE			
L & M			
FIRE			
STATE R.A.			4/18
CAL. R.A.			
ESMER. R.A.			
Sulinski		pja	4/22/74

FILE CODE

1 - ACTION 2 - INFOR.

NATIONAL PUBLIC LANDS TASK FORCE

NEVADA OUTDOOR RECREATION ASSOCIATION, INC.

3/18
3/22

P. O. BOX 1245
CARSON CITY, NEVADA 89701

[illegible] MEMBERS
[illegible] Watson, Jr.
[illegible]
[illegible], Nevada
[illegible] Ro[illegible]
Darwin Lambert
[illegible], Virginia
[illegible] De Hart
[illegible], Nevada
[illegible] L. Evans
[illegible], Nevada
[illegible] Foreman
[illegible], Maryland
[illegible] Giannelli
Auburn, [illegible]
[illegible] North Dakota
[illegible] Locke
Austin, Texas
[illegible] Lyon
[illegible]
[illegible]
Nevada
George Hudson
[illegible], Washington
Carmelita Lowry
St. Louis, Missouri
Steve Francis
Sparks, Nevada
M. Burrell Bybee
Ely, Nevada
[illegible] McC[illegible]
[illegible]
[illegible], Nevada
IN MEMORIAM
George Kell
Sparks, Nevada
George [illegible]
[illegible]
Charles [illegible]
Sparks, Nevada
[illegible] G. Hulse, Sr.
Pioche, Nevada

March 18, 1974

Mr. E. I. Rowland
State Director
U.S. Bureau of Land Management
Room 3008, Federal Bldg.
300 Booth Street
Reno, Nevada 89502

Re: Red Rock Canyon NEPA draft
Environmental Impact Statement

Dear Mr. Rowland:

Firstly, this organization desires to point out a serious omission in the draft statement's chronology of activities (page 177) of "individuals and groups" involved in the formulation of BLM plans for the Red Rock Canyon Recreation Lands. This organization was the first citizen organization to submit a report to the BLM recommending preservation and recreational management of the Red Rock Canyon area. Enclosed is a copy of that first citizen report, somewhat revised, which was presented to then State BLM Director, J. Russell Penny, in April 3, 1964--by a "Nevada Survey" delegation composed of Carola Hutcherson, George Kell and Charles S. Watson, Jr. In 1965, I retrieved the Red Rock Canyon study and personally turned over the original copy to then BLM chief of recreation Eldon F. Holmes. We retained a copy for our records--from which the enclosed was reproduced. The original NORA Red Rock Canyon study was used extensively by Mr. Holmes and his staff in preparing plans for the bureau's Red Rock Canyon Recreation Lands proposal(which was brought to fruition on October 29, 1967). IX-1

In the interests of maintaining a true record of our initial involvement in the creation of the BLM's Red Rock Canyon Recreation Lands program, this organization stresses the need to amend page 177 of the draft impact statement--to show the April 3, 1964 presentation of the NORA Red Rock Canyon study to Mr. J. Russell Penny and the subsequent presentation to Mr. Eldon F. Holmes in March, 1965.

Concerning the draft statement's recommendations--this organization strenuously opposes the designation of certain lands as "open space" on the "Map No. 2"in areas recognized as BOR Class V(primitive area) in our 1964 report. NORA also opposes the proposed Red Rock Canyon "Scenic Drive" and "Skyline Drive" proposals as shown on "Map No. 3" of the draft statement. It should be noted that such "open space" criteria was notoriously used by the National Park Service (which resulted in serious criticism by the Conservation Foundation in 1971) for eventual roads and other eyesore intrusions into defacto wilderness areas.

NORA's objection to "open space" designations on "Map No. 2" are directed primarily to where it falls within the proposed La Madre Primitive Area(see map, in addenda of report) and in the high Sandstone Cliffs country, labelled on our NORA report's map as, "Red Rock Canyon Primitive Area". NORA does not object to the "open space" designations on the valley floor, where the designation co-incides with BOR Class III(Natural Environment Area) designations on the NORA report's map.

This organization would prefer Alternative II of the BLM's draft NEPA statement....with the lone exception of elimination of the proposed road(re: "Map No. 14") from Point 10(Ramshead Guard Station) to Point 8(Rams Head). This organization cannot endorse Alternative II as long as this road recommendation remains a part of it. If deleted, this organization would have no reservation recommending Alternative II as the best enfironment planning solution to Red Rock Canyon's long term management. NORA urges, therefore, a further refinement to Alternative II, minus the Point 10-8 road, and/or the insertion of an additional Alternative reflecting this point of view.

NORA agrees with the BLM's premise that Alternative IV would prove unrealistic in terms of meeting visitor use pressure in the area ....although desireable in preserving the maximum primeval area in Red Rock Canyon. Alternatives III and I would invite an inordinate amount of "mass-use recreation" in areas too fragile, in terms of rare and endangered flora, fauna and critical archeological sites, for such uses. Alternative II, however, recommends excessive overnight use in the main Red Rock Canyon area--which should be scaled down to "day-use" only facilities, as it is at the present time. NORA also believes careful management procedures should be instituted to preserve the outstanding scenic character of the colorful Calico Hills area.

NORA strenuously opposes the "Brownstone Loop" road, as shown on Alternatives I and III--on the grounds it would be a prime threat to unique wilderness values and clearly debilitating to unique archeological phenomenon in the region north and northeast of the Calico Hills. We have little doubt that the state of Nevada will develop several areas, on lands recently purchased(early 1974), for mass use recreation. The BLM, therefore, should concentrate on maintaining the pristine character of these public lands remaining in the BLM's Red Rock Canyon Recreation Lands program. Needless to say, NORA is vigorously opposed to the transfer of any of these public lands to the state of Nevada....especially, when the state has declared its intention to honor the provises of Senate Joint Resolution #6, passed by the 1961 Legislature, which "memorializes against the establishment of wilderness, primitive areas, natural areas and wild rivers in Nevada." As long as Nevada considers this resolution valid in state planning, public lands having prime wilderness values cannot be transferred to the tender mercies of such an anti-environmental policy.

Respectfully submitted,

Charles S. Watson Jr.

Charles S. Watson, Jr.
Director

NEVADA WILDLIFE FEDERATION, INC.

Affiliated with the National Wildlife Federation

P. O. BOX 49 SPARKS, NEVADA 89431

4/25 Acting

4/26

April 24, 1974

JOHN SWEETLAND, PRES.
CARSON CITY

MRS. LOWELL MONDAY, SEC.
SPARKS

JACK YOUNG, TREAS.
RENO

VICE-PRES. DISTRICT NO. 1
PHILLIP T. GREGORY, JR.
LAS VEGAS

DIRECTORS:
VERLIS FISCHER, LAS VEGAS
EVE CRAFT, LAS VEGAS
JEAN FORD, LAS VEGAS
RICHARD BRYAN, LAS VEGAS
JAMES BRUNNER, LAS VEGAS
GORDON EGGLESTON, N. LAS VEGAS
DENNIS SELLECK, LAS VEGAS
MARVIN EINERWOLD, LAS VEGAS

VICE-PRES. DISTRICT NO. 2
RUSSEL RHODIG
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DIRECTORS:
WAYNE CAPURRO, RENO
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FRANK GRAVES, WASHOE VALLEY
GEORGE WILKERSON, CARSON CITY
RICHARD LAIR, RENO
AL RAICHE, SPARKS
MARY GOJACK, RENO
BILL BRUNELL, SPARKS
HEWITT WELLS, RENO
DON QUILICI, CARSON CITY
JAMES TOONE, RENO

VICE-PRES. DISTRICT NO. 3
BURT GURR
ELKO

DIRECTORS:
WM. GREEN, ELKO
LINDA WRIGHT, DEETH
SYLVAN PETERS

VICE-PRES. DISTRICT NO. 4
HANK PUCKETT
BABBITT

VICE-PRES. DISTRICT NO. 5
AL STONE
ELY

Mr. Edgar Rowland, State Director
Bureau of Land Management
300 Booth Street
Reno, Nevada 89502

Dear Mr. Rowland,

The Nevada Wildlife Federation wishes to show our continuing concern for the proper protection, management & development of the Red Rock Recreation Lands in Clark County, Nevada.

We have reviewed the Draft Environmental Statement recently released and wish to support and commend the views regarding that statement expressed on April 16, 1974 by the Nevada State Park System and the written testimony of Assemblywomen Jean Ford.

We agree that there is need for the 1968 Master Plan to be updated and would particularly support the following:

1. Elimination of the Crestline Scenic Drive south to Ramshead.
2. Re-evaluation of the road system on the valley floor, particularly the alignment of Loop "B".
3. Re-evaluation of the carrying capacity of all proposed development sites in a site-by-site analysis.
4. Re-statement of water allocation priorities, placing maintenance of wildlife and existing vegatation over human comsumption.

We strongly support a policy that no improvement of present roads or development of new roads be done without concurrent proper preparation of the sites that recieve the easier access--and adequate management to supervise activities in the area.

We are strongly opposed to a "dawn to dusk" proposal of operation which would deny many citizens the opportunity to enjoy overnight camping. We feel that this recreational

Mr. Edgar Rowland
cont....

activity can be allowed at selected areas and several varieties should be planned for: (i.e.) family car camping, primitive sites, (with no water provided), and designated areas for backpackers in the back country.

We reaffirm our statement made in a resolution adopted in May 1971, wherein the Nevada Wildlife Federation supported the BLM's classification of the Red Rock area as highly desireable for recreational use and enjoyment. We strongly urge that any development be carefully planned in order to afford maximum protection of those scenic resources that people are coming to enjoy.

We also urge the updating of the Master Plan, particularly in the light of the State's acquisition of key private inholdings, and offer our continued assistance in the future.

We further request that Federation officers in the Clark County area be kept advised on any meetings regarding the Red Rock area.

Very truly yours,

John H. Sweetland

John H. Sweetland, President
Nevada Wildlife Federation

JHS:ns

cc: Thomas L. Kimball, Exec. Vice-President, National Wildlife Federation; William Reavley, Executive Director, National Wildlife Federation; Camille Monday, Secretary, Nevada Wildlife Federation

Friends of the Earth
Arizona Branch • p.o. box 1893 • scottsdale, arizona 85252

STATEMENT OF KEVIN DAHL

Before the Bureau of Land Management in Las Vegas, Nevada
on April 16, 1974, concerning the management plan for the
Red Rock Recreation Lands.

I am reading this statement for Kevin Dahl of Scottsdale, Arizona who is representing Friends of the Earth , a national organization of over 22,000 members, dedicated to the preservation, restoration and rational use of the Earth. We appreciate this opportunity to present our views on the environmental impact statement prepared for the management plan for the Red Rock Recreation Lands.

The Red Rock area is truly a valuable natural resource, not only for citizens of Las Vegas, but for the entire nation. I went there recently for the first time and was lucky to see four desert bighorn sheep after only a couple of hours hiking. To have such a uniquely primitive area so close to a metropoitan city is indeed fortunate.

I, as a visitor to Las Vegas, was impressed to find an area like Red Rock nearby. It offers high quality outdoor recreation to those who care to experience this country on its own terms, which means leaving ones car to walk for a little bit. Development to make this place easier to get to, or more convient, will serve to bring more visitors, but it will degrade the land's integrity, and thus degrade everyone's recreation experience.

Friends of the Earth ask that the Red Rock Recreation Lands be managed consistant with its primitive qualities. Protecting and preserving its wilderness characteristics, the riparian areas, wildlife, and guarding against needless vandalism is much more important than inappropriately overdeveloping this marvelous area.

Nevada conservationists have studied this issue for some time and have many good suggestions. We urge the Bureau of Land Management to consider their recommendations for managing this area in its primitive condition.

Thank you.

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CAL. R.A.			
ESMER. R.A.			
		Rjp	4/23/74

FILE CODE

1 - ACTION 2 - INFOR.

Bureau of Land Management
APR 18 1974
LAS VEGAS DISTRICT OFFICE
Las Vegas, Nevada

"Committed to the preservation, restoration and rational use of the Earth"

Saguaro Ecology Club
6250 82nd Street
Scottsdale, Arizona
85253

Please reply at:
4725 N. 70th St.
Scottsdale, Az. 85251

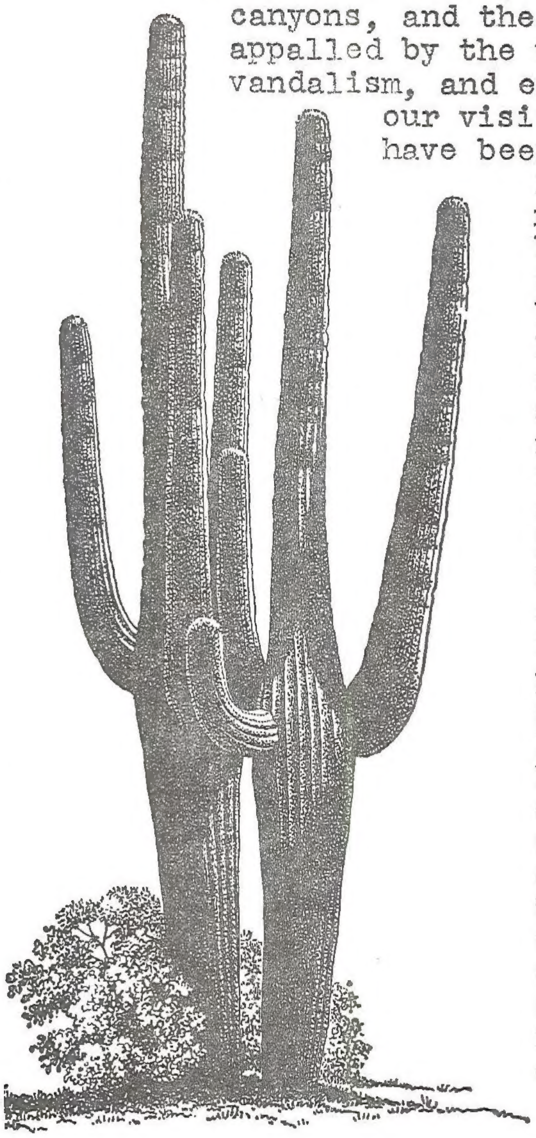
APR 10 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

John S. Boyles, District Manager
Bureau of Land Management
Las Vegas District
P.O. Box 3
Las Vegas, Nevada 89101

Dear Sir:

The Saguaro Ecology Club very strongly supports the position of Nevada conservationists regarding Red Rock Recreation Lands. We agree that there should be limited development below the escarpment and no development above.

Several club members recently had the opportunity to visit Red Rock Recreation Lands. We were awed by the colorful cliffs, the deep canyons, and the spectacular views. On the other hand, we were appalled by the ugly road scars, off-road vehicle tracks, litter, vandalism, and ecological damage that confronted us throughout our visit and made it far less enjoyable than it might have been. It became apparent to us that Red Rock is faced with a multitude of serious problems that must be dealt with.



We feel that one step in solving these problems is recognition of the full spectrum of values to be found at Red Rock. Far from being of only local or regional significance, the Red Rock area is of national importance, a fascinating natural area belonging to all Americans. It is valuable not only for recreational purposes, but also for its unique mixture of ecosystems and its primitive character. Red Rock should be managed and developed in accordance with these qualities, rather than being thought of as a city park for Las Vegas. For despite its proximity to urban areas, Red Rock truly is an outstanding natural area, and it should be preserved and protected for the benefit of all citizens of the United States.

It is also important to consider the differences beteen management and development. Development of an area can be useful and beneficial only if it is properly managed; development without adequate management can only have negative effects. The proposals for Red Rock would fully develop the area and make virtually all of it easily accessible to huge numbers of people, yet no consideration is given to the management of such crowds in this sensitive natural area. It is absolutely essential to develop good management policies and

practices, and to provide the manpower and resources needed to carry them out.
The Environmental Impact Statement should consider the alternative of state acquisition and/or management of Red Rock. Close scrutiny should be given to the impact of this action as regards the content of legislation effecting the transfer which would be necessary to assure that state management would follow the guidelines finally set forth for the development and management of Red Rock. VIII-46
In addition, we were extremely disappointed that the EIS did not mention or discuss the alternative that Nevada citizens have been endorsing for years: Limited development below the escarpment and no development above. The lack of consideration of this alternative is a serious deficiency in the EIS, rendering the statement misleading if not completely meaningless.

The BLM should realize that their Master Plan, drawn up in 1968, is hopelessly outdated. The plan focused on driving for pleasure and accomodation of large groups in highly developed areas; six years later the energy crisis has almost eliminated driving for pleasure, while the popularity of primitive back-country recreation continues to grow at a phenomenal rate. The 1968 proposals are completely incompatible with the realities of recreational values in 1974.
In addition, it should be remembered that the proposals have never had the support of the public. From 1968 to the present, Nevada citizens have repeatedly voiced their opposition to the Master Plan; yet the BLM refuses to modify their position.
There is a clear and urgent need to update the old studies, produce a meaningful Environmental Impact Statement, and accept constructive input from the public. In this way, and in this way only, can the problems at Red Rock be resolved once and for all and in the best public interest.

We have a number of comments and suggestions to make on the EIS and the Master Plan, and we hope that you will take them into serious consideration.

1) Red Rock should be open for day-use only, except on a limited permit basis for camping and back-country travel. This would significantly cut down on undesirable activities associated with camping, such as destruction of vegetation for firewood, wildfires, litter, and degradation of sensitive areas.
2) There should be no development at any of the canyon mouths, and existing access roads should be closed to motorized traffic. Easy access to the canyons would result in greatly increased use which, as the EIS points out on page 94, would cause trampling of vegetation, erosion, brush fires, an increase in litter, pollution, and vandalism. These activities would cause serious damage to the delicate canyon ecosystems, particularly the lovely but fragile Pine Creek Natural Area. VII-1
3) Plans for the Crestline Scenic Drive should be abandoned, and the area atop the escarpment should be maintained in its present primitive state. The Red Rock Summit road should be kept in its present condition and for its present use. Abandoning the road proposal would eliminate the numerous adverse effects of the road. Among these, according to the EIS, are: III-23
    a) Significant loss of primitive values.
    b) Great visual impact due to large cuts and fills which would be visible for many miles. III-22

c) Disturbance of wildlife and loss of habitat. III-9
d) Damage to vegetation.
e) General intrusion of a nearly pristine area.
f) Quote from page 133 of the EIS: "The construction of this segment of road would be directly opposed to the reason the Red Rock Canyon area was designated a Recreation Lands - its scenic grandeur".

4) Segment B of the Red Rock Scenic Drive should not be completed until a re-study of alternative routes is made. The existing Willow Springs road should be considered as a possible route.
5) The Red Rock Scenic Drive should be established as a one-way route. IV-15
6) There should be no development at Brownstone Canyon, and no road into the Canyon from existing park roads.
7) Motorized vehicles should be prohibited in the valley south of Bonney Springs Ranch.
8) Off-road vehicle use should be prohibited and regulations strictly enforced. IV-15
9) Manned guard gates should be located at the park boundary on all main roads.
10) The Visitor Center should be located so as to have minimal visual impact. The proposed administrative site near the Charleston Blvd. entrance should be considered, along with the Spring Mountain Ranch and Blue Diamond. IV-15
11) An interpretive program should be established as soon as possible, perhaps with volunteer naturalist programs. IV-13
12) The Spring Mountain Ranch should be considered for use as:
    a) Educational center in co-operation with school districts. IV-14
    b) Natural History center.
    c) Picnic areas near the developed parts of the property.
13) Public conveyance to picnic areas such as Sandstone Quarry, Rocky Gap, La Madre Canyon, and other appropriate locations should be studied as a possibility.
14) Motorized traffic to picnic areas should be discouraged, thus making the areas less crowded, less noisy, and more aesthetically pleasing. Vegetative damage and soil erosion would also be decreased. The emphasis should be on "walk-in" picnic areas.
15) Fires should be prohibited except at designated picnic sites, and no gathering of wood should be allowed. Perhaps wood could be gathered and brought in from elsewhere and provided for visitor use, thus eliminating the destruction of living vegetation for firewood. IV-13
16) Trail construction at sensitive areas should begin as soon as possible. The random use taking place at present is highly destructive to vegetation and soil and cause an unsightly criss-cross of foot paths. High priority should be given to these trails:
    a) From Sandstone Quarry to Hidden Lake.
    b) From Red Rock Summit to the ridgetop west of Bridge Mountain.
    c) To Lost Creek at the base of the lower falls.

    Trails should also be built along the main ridgecrest, along the base of the escarpment, and from Sandstone Quarry to Brownstone Canyon.

17) Page 67 of the EIS states that "Red Rock is one of the outstanding natural areas of the Southwest." We suggest that the magnificent natural values of Red Rock be recognized by changing the name of Red Rock Recreation Lands to Red Rock Natural Area. Such a name change would de-emphasise recreation, instead focusing on the area's true values.

18) Last, but far from least, we ask that the area west of the escarpment, La Madre Ridge, and the south end of Red Rock valley be studied for Primitive Area designation. These areas are unarguably of high primitive quality, and they should be given this protective designation. Considering the growing demand for primitive recreation near cities (especially in light of the gas shortage), the establishment of a Red Rock Primitive Area would be of great and lasting benefit to the residents of Las Vegas as well as the nation. I-8

Thank you for this opportunity to express our views. We hope that you take our thoughts into careful consideration, along with those of the Nevada organizations which have worked so long and so hard to assure that Red Rock will be developed and managed in the best public interest.

Sincerely,

Tom Wright

Tom Wright

ROUTE	ACTION	INIT.	DATE
D.M.			4.19
CH., R.M.			
CH., OPER.			
ADMIN.			
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STATE R.A.			4/23
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1 - ACTION 2 - INFOR.

C RK COUNTY GAME MANAGEMENT ARD

MARVIN A. EINERWOLD - CHAIRMAN
1001 BAKER AVENUE
LAS VEGAS, NEVADA 89108

John S. Boyles, District Manager
Bureau of Land Management
Las Vegas District
P.O. Box 3
Las Vegas, Nevada 89101

Mr. Boyles:

SUBJECT: Red Rock Recreation Land Development.

This statement is in reference to the environmental impact statement for the Red Rock Recreation Lands prepared by the Bureau of Land Management in 1968.

I would like to commend the B.L.M. Staff for the detail and thought that went into this report.

As a representative of the Sportsmen of Clark County I am vitally interested in the Wildlife of this area, and in particular the Desert Bighorn Sheep. This area is reported to have an approximate population of 200 Desert Bighorn Sheep. Red Rock is also the only area where a documented sighting of an Albino Desert Bighorn Sheep has taken place.

Also the Nevada State Legislature, in the last session saw fit to make this magnificent animal the symbol of our state by passing a law making it our State Animal. II-33

I believe the full development of the Red Rock Area would ultimately destroy this resident herd of Desert Bighorns. Any development on the top of the escarpment (Crestline Senic Dr.), (Red Rock Senic Dr.) and the trail planned below the escarpment would alter the use of prime Bighorn waters and winter habitat. These roads would affect approximately 2100 acres of winter habitat and 4 waters used by these animals now. These planned road developments on the top of the escarpment would affect 13,000 acres out of a total of 64,000 acres. The important thing is the 13,000 acres affected is the heart of the Bighorn Sheep area. It is probably half of the area used by the Bighorns and is the area where all the Springs are located. III-12

The limited hunting allowed in this area each year by the Nevada Department of Fish and Game (5 tags in 1973) has no affect on this herd. There are only 2 or 3 animals taken each year and the biological information gathered from these animals is invaluable to their future welfare.

In summary I would like to recommend the development of the Red Rock Recreation Area be limited to the area below the escarpment and limited to day use with no over night camping. That no development be allowed on the top of the escarpment such as the senic drives. That this area be preserved as it is for the wildlife of the area and especially for the Desert Bighorn Sheep that are residents of this area.

I would like to thank you for your consideration in this matter.

Sincerely

Marvin A. Einerwold

Marvin A. Einerwold
Chairman

ROUTE	ACTION	INIT.	DATE
DM.			4-22
A. S. M.			4/23
[illegible] OPER.			
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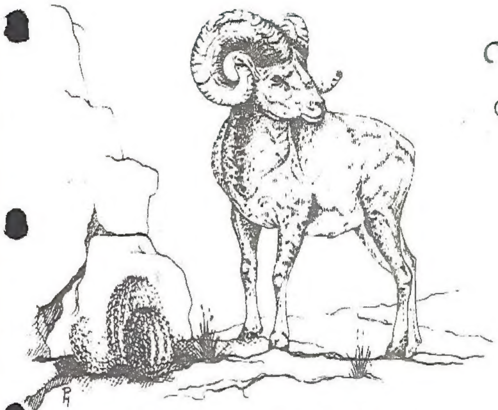

Fraternity Of The Desert Bighorn

Box 1084 • Las Vegas, Nevada 89101

April 19, 1974

Mr. John S. Boyles
District Manager
Bureau of Land Management, Las Vegas District
Box 3
Las Vegas, Nevada 89101

Dear Mr. Boyles,

The Fraternity of the Desert Bighorn would like to submit the following comments on the Red Rock Canyon draft environmental impact statement.

With the constantly increasing population in southern Nevada, it is obvious to us all that more recreational activities must be made available to the public. Unfortunately, portions of this proposal go far beyond this objective, if wildlife is to be considered at all. The Crestline scenic drive and Red Rock scenic drive must never be allowed to happen. If the upper elevations are open to easy access the Bighorn Sheep population in the entire areacan simply be 'kissed' off. These animals cannot withstand any further human encroachment in the few remaining waters left open to them. Although the proposal makes provisions for artificial watering devices to be installed in more remote areas, in the hope of transferring the Sheep use, this method has never been proven successful. The Fish and Wildlife Service, the Nevada Fish and Game Department and the Bureau of Land Management have all done, and are continuing to do, an excellent job of developing artificial waters for the Bighorn, but to the best of our knowledge these additional waters supplement existing natural water and have not yet been able to transfer Bighorn watering habits to areas where natural water does not exist. One of these watering devices was recently constructed in the Red Rock area in a joint venture with the Bureau of Land Management and the Nevada Fish and Game Department. If these scenic drives are established this new water would be immediately adjacent to a paved road and consequently quite useless. III-11

The Fraternity would very much like to see a compromise plan, such as alternate #3. Development should be confined to below the escarpment and limited to day use only. This type of development would be more in keeping with the real objective of living in harmony with our limited resources.

Thank you for this opportunity to express our views.

Sincerely,

Carl F. Ciliax
Carl F. Ciliax
President

CC/cf

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1 - ACTION
ROUTE
D.M.
CH., R.M.
CH., OPER.
ADMIN.
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STATE R.A.
4/22/74

" A MEMBERSHIP UNSELFISHLY DEDICATED TO THE UTILIZATION, CONSERVATION AND WELFARE OF THE DESERT BIGHORN SHEEP"

STATEMENT OF LAS VEGAS GROUP TOIYABE CHAPTER SIERRA CLUB
On Red Rock Recreational Lands Draft Environmental Impact Statement

Prepared by Jeoffrey Zucker; Read by Billy Jean James

We have many observations to make about the Draft Environmental Impact Statement for the Red Rock Recreation Lands. We have prepared a detailed listing of our comments to supplement this statement, which we have attached as Appendix A. At a recent BLM workshop discussing the EIS it was indicated that groups should present their view regarding the future development of the Recreation Lands at this hearing. Although we question the desirability of attempting to formulate such a position before a complete EIS is available, based upon such information as the EIS does contain and such as we have been able to independently obtain, we have attempted to roughly outline our views regarding the maximum development possible without unduly impairing the scenic, ecological, archeological and recreational values of Red Rock. That proposal is attached to this statement as Appendix B. The statement itself will only discuss in a general way some of our concerns about the EIS.

In the Spring of 1972, the Bureau of Land Management opened Segment A of what is now called the Red Rock

Scenic Drive. At the same time the Bureau was completing plans to start with a proposed Segment B. Segment A, then not yet paved, opened up new areas to easy access. Unfortunately, no provision was made to provide management commensuate with this development. For a time the Bureau was forced to resort to closing areas as the only available means of protecting them. As a result of concern over the degradation associated with the inadequately managed development of Segment A and with the proposal for Segment B, a public hearing was held on June 22. At that hearing attention was focused on management problems and on Segment B, as well as on the general development proposals of the Bureau of Land Management. At that meeting that the Bureau announced that neither Segment B nor any other significant development would occur on Red Rock Recreation Lands until an environmental impact statement had been completed as required by the National Environmental Policy Act. Now, almost two years later, we finally have a chance to see and comment on the draft statement. We had hoped that we would now have an EIS providing the information necessary for informed decisions regarding the various proposals for the Recreation Lands. Unfortunately, this is not the case.

At least when discussing high development alternatives, the EIS assumes, either explicitly or implicitly, that adequate management will be provided. However, if there is one thing that the recent history of Red Rock teaches, it is that management and development are not synonymous and that without adequate management development which might be desirable or at least endurable becomes disastrous. The fact of development without management played no small part in the events that resulted in this EIS. Since development can and has occurred without adequate management, any meaningful discussion of the impact of proposed developments must consider the impact of such developments without management. Management can have a mitigating effect on such impacts and should be discussed in that role. IV-12

It is strange that of the alternatives considered in the EIS, no attention was paid to, indeed, no mention was made of, the alternative that was vehemently discussed at the meeting of June 22, the use of the existing roadway from Willow Springs to the Blue Diamond Road instead of construction of Segment B, if it is decided that a loop-road is necessary in that area. Since the short run purpose of the EIS was at least purported to be to enable a decision to be made about Segment B, it is intolerable for the EIS not to discuss alternatives to that road.

In part this failure may be due to the approach of the EIS, which is to discuss the impact of general levels of development with very little attention paid to the location of that development, except in the case of discussion of the land west of the escarpment and, to some extent, Pine Creek. At a minimum, the special effects of the proposal on the different types of areas - escarpment canyon, limestone canyon, flat land, and sandstone - should be specifically discussed. Indeed, each proposed development area should be individually considered. It would not be necessary to discuss separately the general impact of development on each area. All that would be necessary would be to add at the end of the discussion of the general effects of the proposal a section dealing with the special effects of the proposal on particular areas. III-1

The failure to consider each area may have been the reason that the limited development alternative discussed in the EIS is not limited development as that term is interpreted by many who thought that that was what they supported.

Limited development can mean limited development at many sites instead of full development at a limited number of sites. VIII-31 In view of the statement's general approach, we can understand how an alternative requiring consideration of each site would be overlooked. This does not justify omission of consideration of this type of limited development, but rather argues for more attention be paid to the actual, site by site, environmental impact of the proposal under consideration. Indeed, if the EIS only discusses the impact of general levels of development, the only decision that could be based on it would be one of a similar general nature and each specific development proposal would require its own EIS.

In addition to the failure to discussion certain factors and alternatives, we feel that in many instances such discussion as does occur is inadequate. The discussion of water is a prime example. The natural springs in Red Rock Canyon are one of the prime ecological and recreational values of the region, not only for their own sake, but also for the wildlife and vegetation they support. We doubt that anyone would support a proposal for the Recreation Lands which would drain those springs dry. Yet the impact statement makes no mention of the information which the Bureau of Land Management in Las Vegas has, at its March 28, 1974 workshop, indicated it has which shows that it may not be possible to obtain adequate potable ground water. If this water is not available it may be necessary to drain the springs to support development at the level presently proposed. Even if water may be pumped, experience elsewhere in Las Vegas indicates that pumping can stop the surface flow, yet no discussion of these facts or possibilities occurs in the EIS. III-7

In certain instances the EIS seems to be more of a promotional blurb designed to justify a decision already reached, rather than an unbiased report upon which future action can be based. For instance, although the EIS initially recognizes that in recreation "supply creates its own demand," various development alternatives are later found wanting because of their inability to meet this ephemeral demand. Indeed, at one point it is implied that the existing picnic demand is 600,000 visits annually, the same number as previously given for all visits for all purposes to the entire Recreation Lands. II-56

At the time work on the EIS began, the Nevada State Park System was already actively engaged in efforts to acquire a private inholding in Pine Creek. For almost a year the System has been trying to obtain the Krupp Ranch property, designated as a lodge in the proposal. These acquisitions have been in process long enough that they should have been considered in the draft and must be considered in the final EIS. State acquisition of the Krupp Ranch I-1 for park purposes requires consideration not only for its effect on the proposals for the ranch itself but also for its potential as an alternative to existing proposals. For instance, the State has indicated that it may use the Krupp property as its administrative center. Use of the same facility for administration for the rest of Red Rock, whether managed by BLM or the State, must be considered as an alternative to the current plans which, together with the State center, would have three different administrative buildings in the Red Rock Recreation Lands. The availability VIII-30 of this property for camping and picnicking should also be considered as an alternative to using more fragile canyon areas for these purposes.

As was said before, we had hoped that this draft environmental impact statement would mark the end of the planning process for Red Rock. Because of its deficiencies unfortunately much remains to be done. We must observe that many of the major concerns we have raised tonight were raised by many members of the public before work on the EIS commenced. Had the public been more fully brought into the drafting process in the beginning, the need for substantial revisions now might have been avoided. We would urge that such consultation be employed in drafting the final impact statement so that it can in fact be final.

APPENDIX A

1. Relationship with Other Projects and Proposals (pages 10 to 11). As indicated later in the EIS, summer temperatures at the lower elevations of Red Rock are so high as to impair the desirability of using those areas at such times. Although the upper levels are cooler, they are still lower and warmer than areas, such as Mt. Charleston, which are generally given the attribute of "high" country. In wintertime all regions are too cold to be ideal recreation spots. While there is not a perfect overlap, areas such as Valley of Fire, Lake Mead and Mt. Charleston are already developed to provide many of the same recreational opportunities as are proposed for Red Rock. It is therefore inaccurate to state that the various areas play unique recreational roles or that Red Rock has no undesirable seasons of use. The EIS should also, perhaps by using the word "higher" instead of "high," make it clear that summertime temperatures, even on the escarpment, are significantly hotter than Mt. Charleston.

2. Water (page 16). The Bar Nothing Ranch and its water rights have been acquired by the State of Nevada. II-20

3. Water (page 18). At its workshop on March 28 the Bureau of Land Management indicated that based on available information there may be some problems with the availability of ground water. This information should be made a part of the EIS. III-7

4. Soils (page 18). At the March 28 workshop the Bureau indicated that some soil tests have been made. The results of these tests should be in the EIS. If they are not sufficient to make a decision on the location of roads or sewage plants, a supplemental impact statement for these facilities would be necessary before they are commenced. II-14

5. Wildlife (page 40). Several years ago the name of Nevada Southern University was changed to University of Nevada Las Vegas. IX-5

6. Livestock (pages 49 to 51). The acquisition of the Bar Nothing Ranch and its water rights by the State of Nevada appears to render the discussion of livestock moot. II-37

7. Recreation (pages 54 to 55). See paragraph 1 of this Appendix regarding the designation of part of Red Rock as "high."

8. Recreation (page 55). The figures regarding the growth of visits to the Recreation Lands indicate that at least some user groups find Red Rock in its current state satisfies their recreational needs. The statement should make it clear that only certain types of development oriented recreation use are limited by a lack of additional facilities. II-52

9. Recreation (page 57). While use of Segment A may have been light it induced sufficient over-use of adjoining areas to require temporary closure of certain areas. This information should be set forth in any discussion of Segment A. III-19

10. Urban-Suburban (page 61). The State of Nevada has acquired the Pine Creek property and the Bar Nothing Ranch. I-12

11. Political-Type of Government (page 70). The Clark County Commission has seven members. In view of its acquisitions the role of the Nevada State Park System should be discussed here. II-58

12. Social and Economic (page 73). The economic base of Clark County is tourism, but it is urban oriented, not outdoor tourism, although many tourists may visit outdoor II-61

sites once they arrive. Although many tourists may come to Las Vegas because it is on the route to various outdoor recreation areas, it is their stay in the city, not outdoors, that contributes to the Las Vegas economy. Indeed, recently there have been growing efforts to attract recreational vehicle tourists away from recreation areas and into the urban area, as evidenced, for example, by the Stardust Hotel's recent development of a camper facility. From an economic standpoint outdoor recreation sites are not necessary for Clark County and may even have a negative effect to the extent that they keep tourists away from the entertainment centers. The EIS statement that such outdoor facilities are "very necessary" is at best puffery.

13. Social and Economic (page 75). The table on page 74 does not contain the visitor per day estimates referred to.

14. Economic Structures of Associated Counties in 1970 (page 75). The table on page 76 does not give information for two counties.

15. The Environmental Impact of the Proposed Action (page 79). See our general comments regarding the necessity

for consideration of site by site impact and the impact of development without adequate management.

16. Water (page 79). See paragraph 2.

17. Water (pages 80 to 81). See our general comments concerning problems associated with the availability of ground water and the potential impact of any consumptive use on the existing springs.

18. Soils (page 81). In addition to discussion of the direct effects of use on soils, specific reference should be made to the potential of erosion induced either by the developments themselves or by the use associated with them. III-5

19. Sewage Treatment (page 84). The statement that an acceptable sewage treatment system will be designed assumes a conclusion. The EIS is supposed to provide information on which conclusions can be based. It should not make such conclusions without presenting such information. IV-4

20. Wildlife (page 84). The grammatical implication of the use of quotation marks around the word "threat" in the context of the EIS indicates skepticism over the ex-

istence of such a threat. At a minimum this skepticism is unsupported. Worse, it may be an indication of a promotional attitude towards capital intensive recreation and a hostility to such uses as protection of wildlife and natural values.

21. Big Game Species (pages 85 to 86). At the workshop of March 28 it was indicated that the opinion that the bighorn can feel secure in the presence of man is not unchallenged. This fact should be mentioned in the EIS. III-10

22. Livestock (page 88). See paragraph 6.

23. Watershed (page 89). The statement that consideration should be given to the flood potential of the arroyos is not itself a statement of environmental impact but merely a statement of the environmental impact analysis that must be made before any development which could have such an impact is commenced. III-7 In view of the discussion of the possible impact of roads east of the escarpment, the statement that roads, such as the Crestline Drive, west of the escarpment, would have a small negative impact would appear to be inaccurate.

24. Minerals (page 89). Here the EIS states that collecting petrified wood is an acceptable use. On the next page it is stated that such collection is not acceptable. At the March 28 workshop the Bureau of Land Management spokesmen indicated that the reason such collection was declared acceptable was because current regulations and policies allow such activities. That such collection is legally permissible does not mean that its environmental impact is acceptable. A determination of acceptability should be made on the basis of such an impact analysis and the analysis should be in the EIS. III-5

25. Recreation (pages 90 to 91). Development itself would not control or prohibit any use. IV-12

26. Urban-Suburban (page 92). See paragraphs 17 and 19.

27. Aesthetics (page 94). The discussion of Segment B should discuss the visual impact of Segment A.

28. Economic (page 96). See paragraph 12.

29. Mitigating Measures - Surface Water and Springs (page 99). See paragraph 17.

30. Mitigating Measures - Flood Problems (page 100). The statement that run-off would be released at non-damaging rates is another assumed solution where what is required is an analysis of whether or not there is such a solution and if so, what its effects are. IV-4

31. Mitigating Measures - Groundwater (page 100). See paragraph 30.

32. Vegetation (6) (page 102). See paragraph 17.

33. Wildlife (1) and (2) (page 105). See paragraph 30.

34. Wildlife (pages 104 to 106). Consideration should be given to the effectiveness of education and touching specimens as a means of protecting wildlife. IV-6

35. Livestock (page 106). See paragraph 6.

36. Soils (page 114). The EIS seems to assume that all the effects on soil except those caused by construction can be mitigated. Even with the best of management some adverse effect should be expected from increased use. III-5

37. *Vegetation* (page 114). See paragraph 36.

38. *Livestock* (page 115). See paragraph 6.

39. *Timber* (page 116). The EIS should mention that presently timber is also being destroyed by cutting, whether for fire wood or otherwise, and that increased use of Red Rock may increase this problem. III-14

40. *Aesthetics* (page 117). The EIS should mention the possibility of increased vandalism as access to areas is eased. III-22

41. *Relationship between local short term uses of man's environment and the maintenance and enhancement of long term productivity* (page 118). The statement that productivity would be increased should be clarified. VI-1

42. *Relationship between local short term uses of man's environment and the maintenance and enhancement of long term productivity* (page 119). See paragraph 1 and our general comments concerning the need for capital intensive recreational facilities at Red Rock. VI-1

43. Water (page 120). See paragraph 17.

44. Visual (page 121). See paragraph 40.

45. Alternatives (page 123). As our general comments state, at a minimum additional alternatives should be considered and it would probably be advisable to take a wholly different approach to the subject. Assumptions, such as those regarding the level of management, should be constant for all alternatives.

46. Physical Factors (pages 127 to 128). The adverse effect of concentrating use on those areas which continue to be used is stated. It should also be mentioned that such concentration might reduce use and its negative effects elsewhere. VIII-32

47. Land Uses (pages 128 to 129). See paragraph 6.

48. Land Uses (page 129). The statement that limiting use will increase demand to allow sand, gravel and stone removal over the demand in the case of full development does not seem correct and should be deleted unless it can be supported. III-4

49. Land Uses (page 132). The discussion of alternatives is supposed to be limited to considering how they differ from the current proposal. It is hard to believe that use of areas which are not now developed or near current developments would be greater under limited rather than full development. The discussion of over-use of such areas should therefore be part of the discussion of the impact of the initial proposal, not its alternatives. III-20

50. Land Uses (page 132). Timber would benefit not only from removal of less trees but also because of less use related vandalism. VIII-35

51. Cultural Environment (page 133). The statement that scars associated with the Rams Head Road would be minimal should be supported. Segment A of the Scenic Drive was supposed to have been designed for minimal visual effect, yet there are many who feel it has a significant negative visual impact.

52. Cultural Environment (page 134). See paragraph 12.

53. Physical Factors (page 139). See paragraph 46.

54. Land Uses (page 143). See paragraph 49.

55. Cultural Environment (page 144). See paragraph 51.

56. Residual Adverse Effects Which Cannot Be Avoided (page 146). See paragraph 12.

57. The table showing the comparative effect of Alternative II does not make sense. In many instances factors which are said to benefit greatly or moderately from Alternative I, such as wildlife, watershed and primitive, are shown to benefit less under Alternative II, although the discussion and other available information indicates that the second alternative would have either no or a beneficial effect on such factors.

58. Alternative III (page 148). The major difference between this alternative and Alternative I is elimination of the Rams Head facility. It is hard to believe that this one change will create the excessive over-concentration and misuse which the discussion of this alternative describes. VIII-15

59. Physical Factors (page 151). See paragraphs 46 and 49.

60. Land Use (page 152). See paragraphs 6 and 49.

61. Land Use (page 156). Experience so far indicates that vandalism is related to access not lack of access. III-21

62. Land Use (page 156 to 157). See paragraphs 46 and 49.

63. Land Use (page 157). The EIS correctly states that in determining the advisability of primitive use in Red Rock, the availability of such areas elsewhere in the vicinity of Las Vegas should be considered. However, it is equally advisable to consider other capital oriented recreation areas in the vicinity in determining the desirability of additional such areas in Red Rock. There is no justification for considering alternative primitive areas but not giving equal consideration to alternative developed recreation areas. I-14

64. Land Use (page 158). While Alternative III will not serve certain recreation groups as much as the current proposal, it is improper to say that it won't help to satisfy the recreational demands of an urban area. VIII-28

65. Cultural Environment (page 159). See paragraph 12.

66. Residual Adverse Effects Which Cannot Be Avoided (page 160). A statement that certain uses would not receive as much consideration under one alternative as they would under another is a proper statement for an environmental impact analyst; a statement that certain uses will not receive fair consideration is only a statement for a promoter for a particular proposal. VIII-29

67. Residual Adverse Effects Which Cannot Be Avoided (page 160). See paragraph 12.

68. Table at Page 161. See paragraph 57.

69. Land Uses (pages 164 to 165). See paragraphs 49 and 6.

70. Land Uses (page 165). See paragraph 48.

71. Land Uses (page 166). The BLM indicated at the March 28 workshop that studies have been made of use of the Willow Springs picnic site. This information should be substituted for the misleading reference to 600,000 visits. II-56

72. Land Uses (pages 166 to 168). See paragraph 49.

73. Land Uses (pages 168). See paragraph 46.

74. Land Uses (page 168). Throughout the country we are hearing more and more of the need for open spaces in urban areas. It would seem therefore that the bald statement that open space would contribute little to the community is not correct. VIII-38

75. Cultural Environment (page 169). See paragraph 61.

76. Residual of Adverse Effects Which Cannot Be Avoided (page 170). The EIS should consider the management alternative of patrolling. VIII-39

77. Residual of Adverse Effects Which Cannot Be Avoided (page 170). See paragraph 66 concerning the statement about the amount of use Red Rock should absorb.

78. Residual of Adverse Effects Which Cannot Be Avoided (page 170). See paragraph 12.

79. Table on page 172. See paragraph 57.

80. Management and Development by Another Agency or a Private Corporation (page 175). In view of recent Nevada State Parks System acquisitions greater attention should be given to the role of the System in Red Rock. I-12

81. Consultation and Coorindation with Others (page 177). In view of the importance of the hearing of June 22, 1972 and the history of the EIS, minutes of that hearing should constitute a part of this section. IX-8

APPENDIX B

We do not purport at this time to provide a detailed site-by-site, road-by-road critique of the present Red Rock Recreation Lands Plan. We do feel, however, that existing information requires consideration of several factors. Preserving the current scenic, wildlife, plantlife and other values of Red Rock must be the principal goal of any plan concerned with the Recreation Lands. Wherever development is allowed it must be designed consistently with this goal. In general, more attention should be paid to management than is currently the case. No site should be developed so that it has anything but a localized, minimal visual impact on the region. No site should be so large as to cause overuse leading to pollution of streams and destruction of vegetation in adjoining areas. Control of access may be necessary.

No site should become a parking lot. Most areas below the escarpment are easily accessible by foot. To the extent that mechanical transportation is needed attention should be paid to the alternative of off-site parking with access by elephant trains, such as is presently the case in

Yosemite National Park. No facility should be placed near springs so as to impair natural water sources through pollution or erosion. There is no need for more than one road to any site. All other roads should be closed. The location and design of such roads as are allowed should be based on careful analysis of the location of existing roads and the visual and other environmental impacts of any proposed road. It is possible but the negative visual and over-use impact of a paved road may outweight the air pollution effects of not paving.

We see no reason for any development west of the escarpment. The effect of such development on wildlife would be great and negative. The effect of such development on the scenic appeal of Red Rock would be great and negative. Recreational benefits would be minimal. Certain recreational uses would be severely impaired. Other recreational uses which may benefit already have available the sandstone regions of Calico Basin and Sandstone Quarry, which offer an experience which is in many respects similar to that available on the escarpment.

The factors which require rejection of alteration of the escarpment, together with an additional concern for the negative impacts on the watershed, requires subjecting development in the escarpment canyons to extreme scrutiny. To the extent that additional capital oriented recreation sites are deemed necessary we feel consideration should be paid to such areas as the Krupp Ranch and the area around the proposed Blue Diamond Administrative Center as alternatives to the unique and fragile canyon areas. In addition to requiring a high level of caution in proposing any escarpment development, we feel that there is already enough information to require changing plans regarding some of these canyons. The EIS indicates that proposals for Ice Box and Lost Creek Canyons were items of limited benefit that were merely tossed in because "an opportunity did exist." The importance and fragility of the life and life-supporting systems in these canyons is such that we do not believe that this is sufficient justification for any development in them. Pine Creek is recognized to be a unique ecological resource. It follows from the general position we believe must be taken with regard to Red Rock development that Pine Creek should not be subject to potential developments which will impair its special qualities in order to provide facilities for uses which could equally well be served if located elsewhere. Pine Creek should be reserved for educational purposes. Such development, if any, as does occur should be far from ecologically fragile areas and all use must be carefully supervised.

ROUTE	ACTION	INIT.	DATE
D.M.			4-22
CH., R.M.			4/23
CH. OPER.			
ADMIN.			
RANGE			
L & M			
[illegible]			
STATE R.A.			4/23
CAL. R.A.			
[illegible] R.A.			
Sulinski		Mp	4/23/74

FILE CODE

1 - ACTION 2 - INFOR.

ERNEST L. YOUENS
P. O. BOX 36 PHONE 339-4510
ALPINE, ARIZONA 85920

Bureau of [illegible]
[illegible]
LAS VEGAS DISTRICT OFFICE
Las Vegas, Nevada

April 20, 1974

John S. Boyles, District Manager
Bureau of Land Management
Las Vegas District
P.O. Box 3
Las Vegas, Nevada 89101

Re: Red Rock Canyon Recreation Lands, Nevada

Dear Mr. Boyles:

May I add my voice in protest against the EIS which has been prepared on the above noted project and presented to the public for review. This EIS, like so many proliferating like evil flowers from federal bureaucratic agencies across the country, again fails to adequately and fairly present all the viable alternatives in an unbiassed manner. The alternative of limited development below the escarpment and no development above is apparently dismissed completely in favor of the standard Disneyland alternatives, which are now all too often being 'pushed' by so-called master-planners with the aid and abettment of the Chamber of Commerce mentalities. VIII-30

We feel that there should be very very limited development in this area in order to better preserve its values, and that there should be an exhaustive additional study of the above noted alternative, as well as the even more viable alternative of consideration of the area as a primitive area.

May we further urge that the obviously outdated 1968 Master Plan be abandoned as no longer suited to the temper of the times, and that a new and more considered Master Plan be developed which would result in no defacement of a highly scenic and valuable area. Developments at the mouth of the canyons is utterly abhorrent to contemplate as are the defacing plans for a Crestline scenic Drive. How could you?

May I urge you to drop this absurdity, and re-evaluate and rework the EIS into a more significant and meaningful document. Man has yet to improve upon nature, but in his stupidity he keeps on trying. It is to be hoped that as these absurdities continue to arise, that there will be a sufficiency of those who care sufficiently to 'bat' them down --- in the courts if necessary.

A careful re-consideration is urged. Sincerely,

Ernest L Youens

Ernest L. Youens, Member, Executive Committee
Grand Canyon Chapter - Sierra Club

4/26/74

THE ARIZONA CONSERVATION COUNCIL
4441 West El Camino Drive
Glendale, Arizona
17 April, 1974

Respond to: Lyndon Keefer, Chairman

John S. Boyles, District Manager, BLM
Las Vegas District
Box 3
Las Vegas, Nevada 89101

Dear Mr. Boyles:

The Red Rock Recreation Lands is of particular interest to Arizona environmentalists. We are aware that the Bureau of Land Management is relatively new in the field of management of lands for other than commodity or exchange purposes. In this state, the Bureau of Land Management is responsible for some 13,000,000 of public domain.

We have had the opportunity, through our wilderness committee, of reading and discussing your 1968 Master Plan. Aside from the fact that it does not carry an environmental impact study, we find that it is not an up-to-date plan, and leans to recreation in its more superficial sense.

The Nevada conservationists have presented a useful and appropriate management plan, and this Council endorses this plan. The Council also urges that your department undertake and report-out a good primitive area study.

Please make this letter part of your permanent public hearing record. It represents the unanimous position of this Council, which is comprised of twenty-two of Arizona's leading statewide conservation organizations.

Sincerely,

Lyndon Keefer

Lyndon Keefer

League of Women Voters of Nevada

April 28, 1974

Bureau of Land
MAY 2 1974
LAS VEGAS DISTRICT OFFICE
Las Vegas

Mr. John Broyles, District Manager
Bureau of Land Management
Las Vegas District
P. O. Box 3
Las Vegas, Nevada 89101

Mr. Broyles:

Re: Draft Environmental Statement for the Red Rock Recreation Lands, Las Vegas, Nevada.

The cover of your environmental impact statement for Red Rock gives a rosier picture than is portrayed within its covers.

The rapid growth of Las Vegas and the tourist industry have placed nearby scenic, cool, or forested areas in jeopardy. An added burden was laid on RedRock when its recreation potential was acknowledged without providing adequate management.

All other values will be secondary to the recreational demand. Yet the same values the tourists seek need protection from their overeagerness. A few unique resources most tourists are not aware of, require vigilant guarding to remain part of Red Rock's and Nevada's flora and fauna.

We compliment you on your efforts to pull together an impact statement and thus give all Nevada's residents an opportunity to view some of the choices for Red Rock.

The League of Women Voters of Nevada has been involved with recreation since 1964 when the League adopted a State Parks item. Since that time the number of parks and financial commitment (indicative of strong citizen support) have grown. We hope the League had a small part in its increasing importance.

While the League has not delved into public lands, it has strongly supported the type of land planning that is the result of continuous public participation and is predicated. on environmental understanding.

Some of our recreational activity has been expended on the Red rocks issue. the League supported a Resolutuion in the Nevada State Legislature transferring Red Rocks over to State Parks. Degradation of resources prompted our concern.

Las Vegas with all its abundant nighttime glitter has less to give its daytime recreationist. The few lands offering relief from desert barrenness and heat are bound to be heavily burdened by appreciative residents and tourists. Red Rock was early recognized for its congenial attractive surroundings. At the same time many rare and unique species also cling to these mountain islands, and are vulnerable to this human intrusion. The Bureau of Land Management is presently incapable of handling the recreation demand.

The alternatives presented by the Bureau are predicated on the assessment that 1) people prefer driving to hiking and 2) they do not want to stray too far from their cars. Their preference is convenient: most people stay within a manageable area. However, roads are often enthusiastically constructed without regard for the resource impact or the agency's ability to manage the new exposed area.

We believe those alternatives maximizing visitor use should not be emphasized. The visitor center is essential. It should explain the area and caution the visitor about his impact. The center may also be a satisfactory end in itself thus removing some of the stress on the resource. The development of roads, picnic and camping facilities should be cautiously implemented.

Some facilities are obviously needed now. Those developments having the least impact on fragile canyon floras, bighorn habitat, and water supplies should be constructed first.

We don't feel there is adequate information on how much water would be needed for the facilities, which sources would be used, nor the degree to which biotic resources will be affected. IV-4

Development above the escarpment should not be considered at the present time. If in the future public pressure dictates further consideration, another EIS should be prepared.

No camping or picnic facilities should be built at Pine Creek or at Lone Pine Creek.

We recognize that the Bureau is in a difficult position between those who want no development and those who feel development is necessary to cope with the masses of visitors. It is hampered by lack of regulatory authority and funding. Another agency might indeed be able to provide the essential funds and authority more quickly. The benefits of federal agencies, however, are the NEPA Act, stronger endangered species legislation, and the national interest. We hope a satisfactory solution can be reached.

Sincerely,

Tina Nappe

Tina Nappe
Environmental Quality Director

NEVADA POWER COMPANY
FOURTH STREET AND STEWART AVENUE
P.O. BOX 230 • LAS VEGAS, NEVADA • 89151

April 4, 1974

Mr. John Boyles
District Manager
Bureau of Land Management
Box #3
Las Vegas, Nevada 89101

Dear John:

Thank you for the copy of the Draft Environmental Statement on the Recreation Management Plan for the Red Rock Canyon Recreation Lands and the opportunity to comment.

The draft is quite silent as to management and protection plans for the area. It is provided in the master plan but not in the draft.

Noneof the alternatives consider the White Rock-LaMadre-Red Rock Canyon Road. It seems to have been overlooked in the draft. Neither is the existing Red Rock Canyon Road considered. It is a live problem which must be either maintained as is, upgraded & improved, or abandoned. It has been a through jeep road since before the CCC Days.

The draft refers numerous times to livestock grazing in the area. With the acquisition of the Spring Mountain Ranch by State Parks, all grazing and water rights were likewise acquired by the Public. Grazing rights should be extinquished, eliminating that problem now and forever. II-37
The cloud or livestock rights on most of the water should be eliminated also.

Should not the Crest Line drive be evaluated? Most of the few voices that have spoken out over the years have opposed the Crest Line drive. I say few voices as it has been the same few, but consistently loud and strong. I agree that the road should be put on ice for the foreseeable future. However, as a compromise, I believe Rams Head road, the trail head, and reduced camp and picnic area should be a part of the plan. This would provide access to the Crest Line trail for the average person and to all an area of cooler environment.

The status of the old Willow Springs road is scarcely mentioned. A return road of the Scenic Loop should be finished and paved. Of course, I recommend completing segment "B" and putting Willow Springs road to bed. This is a critical point to the statement.

Alternative VI, holding the area as is until another agency can take over management, side steps the issue. The adopted plan of development that comes out of this laborious, expensive process should be for the area regardless of which agency manages the area.

At this time I favor Alternative II.

Sincerely,

Dennis E. Hess
Dennis E. Hess
Land Use Coordinator

DEH:jb

ROUTE	ACTION	INIT.	DATE
D.M.		DS	4-10
CH., R.M.		JEB	4/10
CH., OPER.			
ADMIN.			
RANGE			
L & M			
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FILE CODE__________

1 - ACTION 2 - INFOR.

4141 Lakeside Lane
Scottsdale, Arizona [illegible]
April 18, 1974

John S. Boyles, District Manager
Bureau of Land Management
Las Vegas District
Las Vegas, Nevada 89101

Dear Mr. Boyles:

The Red Rock Area ten miles west of Las Vegas, that is now under the Bureau of Land Management's juristiction, has come to my attention. I can not possibly tell you how vehemently opposed I am to the plans for Crestline Scenic Drive or development below the bluffs, that would would only serve to desecrate something far more spectacular than man could hope to emulate. Development above the bluffs should be severely limited in hopes of preserving them in their most natural state.

It is also vital that this area be managed and staffed sufficently, in order to insure that it's beauty will be preserved. Without the proper staff this could not be fully insured. I would also urge you to consider Red Rock for a primative designation. It would be greatly appreciated if this letter would be included in the official hearing statement. Thank you for your cooperation.

Sincerely yours

Katherine Call

4/23

4/23/74

FILE CODE

VIRLIS L. FISCHER
1612 HOUSSELS AVENUE
LAS VEGAS, NV 89104

April 12, 1974

Mr. John S. Boyles, District Manager
Bureau of Land Management
Las Vegas District
P. O. Box 3
Las Vegas, Nevada 89101

Subject: Draft Environmental Statement
for Red Rock Recreation Lands

Dear John:

Thank you for sending me a copy of the Draft Environmental Statement for the Red Rock Recreation Lands in which I have had a surpassing interest for many years. As I will be out of town and unable to attend the public hearing April 16, I ask that you please include this letter in the record.

After reviewing the Draft Statement and considering the various alternatives, I wish to be recorded as favoring the original plan of development and management known in the Draft Statement as the "Proposed Action." This was an excellent and realistic plan conceived by professional park planners, and is just as valid today as it was then, if not more so. We are for the most part a nation on wheels, and, in fact, there are more wheels now than ever. I would like to mention that my support of the proposed action includes the Crestline road, and I would caution against getting into the trap of deadend roads.

I consider the effort to compare the Red Rock Recreation Lands with the tight, deadend Yosemite Valley to be a smokescreen of those who are basically opposed to development for the general public. The two situations have no similarity whatever, while the comparison with Griffith Park in Los Angeles is far more apropos. I am further opposed to efforts to make Red Rocks a wilderness area, and submit that it simply does not meet the criteria for wilderness if for no other reason there is no escape from the sights and sounds of civilization.

As for some of the alternatives, it is obvious that maximum development cannot be achieved except in stages. Some of the alternatives might serve as guidelines in these stages and therefore serve a useful purpose. As for Alternative VI, I am very much in favor of continued federal ownership of the area with development, management, and protection by the BLM. All things considered, including precedents involved, this is the better course -- more practical and more realistic.

In the foregoing comment, I am trying to strike a note on behalf of a general public which is largely unorganized and unaware of what is at stake.

Thank you for this opportunity to make my views known.

Sincerely yours,

Virlis Fischer

Bureau of Land Management
MAR 25 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

March 20, 1974

Mr. John S. Boyles
District Manager
Bureau of Land Management
301 East Stewart Avenue, Box 3
Las Vegas, Nevada 89101

Dear Mr. Boyles:

The following comments are submitted in reply to your letter of March 4, 1974 regarding Red Rock Canyon Recreation Lands.

Alternative III is the one which I think best fits the area for this time.

Any overnight camping should be by permit only.

Grazing rights should not be increased, and should be for limited months only. No hunting should be allowed in any of Red Rock Recreation Lands.

Separate trails should be developed for horses.

All motorized vehicles should be excluded from trails. There should be no off-road vehicle travel.

All wild life areas should be preserved as is.

If all springs were used and developed, very few wells would be needed. Where limited grazing is used, water from springs could be piped away from picnic areas. It would also not be necessary to buy spring rights (see page 99). IV-4

Recreation should be as outlined on page 107.

Sincerely,

F. W. Thorne
Francis W. Thorne

FWT/mm

ROUTE	ACTION	[illegible]	[illegible]
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FILE CODE__________

1 - ACTION 2 - INFOR

P.O. Box 12208 · Las Vegas, Nevada
89112

April 13 · 1974

Dear Mr. Boyles;

Concerning Red Rock — plans + proposals:

Two earnest + urgent "votes" for these:

① NO "development" whatever above the escarpment —
(IT is not "needed" there — please let's leave something — some "uninvaded" areas — to whatever wildlife is left.)

(2) NO campgrounds whatever, anywhere in the area —

In other words, "Day Use ONLY."

a) Campgrounds aren't "necessary" that close to town (+ "home" for the most visitors to the area —). (And we don't "need" the hordes of out-of-staters taking over possible campgrounds there — as they have taken over the Lake Mead + Mojave camps.)

b.) Extensive as it is, the area just isn't large enough to have large camps in it. — Traffic, depredation by ubiquitous dune buggies, + trail bikes, the excessive use by hordes of over-night campers — NO — please!

c. The ecological "scars" left by increasing numbers of "day-users", + the deterioration of the whole area from what we knew (+ loved!) 10 to 15 years ago, is bad enough. Please don't add the infinitely increasing "scars" + depredation from hordes of over-night campers —

Sincerely + urgently —

[illegible] + Jeanne Janish

Red Rock Canyon area is unique, very beautiful, and worth preserving "as is." There is already enough "access" — enough "use" — Please DONT add anything else!

Dear Sirs;

Would you please enter this letter in the hearing record for the Environmental Impact Statement for Red Rocks Recreation Lands.

I am opposed to the original 1968 master plan of the BLM because the environmental impacts would be very high. Much of the Wildness and the scenic beauty would be lost forever if this plan was carried out. The alternative that I favor is limited development below the Sandstone Bluffs and no development above or west of the Sandstone Bluffs.

To be specific this plan should include:

1. No development at the major canyon mouths (including Pine Creek).
2. No development or roads west of the Sandstone Bluffs.
3. Designate the park for day use only except by special permit for back country.
4. Maintain Red Rocks Summit road in its present condition.
5. Locate the Visitors Center away from a point of visual impact.

(cont)

6.-, open fires permit'd expept in designated picnic sites and no gathering of deadwood.

7. Study the south end of the Red Rock Valley and all park lands west of the Sandstone Bluffs for primitive area classification, and also the La Madre Ridge.

8. Change the name from Red Rocks Recreation Lands to Red Rocks Natural Area.

These are my alternatives to the 1968 master plan by BLM.
Thank you.

Sincerely,
M S Mickelson Jr DDS

Bureau of Land Management
APR 13 [illegible]
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nev.

"A GHOST OF THE PAST"
RHYOLITE, NEVADA

Nevada offers a scenic surprise at each new point of the compass. You may choose to wander among grotesque desert rock formations, stretch out in the shade of mountain woodlands or stroll through the ruins of some deserted building. Whatever your pleasure you'll find what you are looking for in scenic Nevada.

Creators of the World's Finest Note Stationery
Bright of America
300 Greenbrier Road
Summersville, West Virginia 26651

Mr. & Mrs. W.E. Atz
324 Tropicana, #405
Las Vegas, Nevada 89109

April 19, 1974

Dear Mr. Boyles:

Red Rock Canyon is not only unique in Nevada, but probably geologically unique in all the world.

Recently three geology students drove day and night from Vermont where they go to college to attend a geology convention here. They did this because of the unique field trips in our vicinity and would not have made such an effort otherwise.

Red Rock area draws people from all over the world. Please don't let any plans be made that will detract from this interesting, lovely area. We who live here are not the only ones in-

ROUTE	ACTION	INIT	DATE
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FILE CODE__________

1 - ACTION 2 - INFOR.

terested in preserving
it, so please never let
it be said we were
unaware of this price-
less possession but
let us protect it with
every resource at our
command.

Perhaps it should be
a National Reserve Area.

Sincerely,
Katheryn Atz
for Mr/Mrs. W. E. Atz

April 18, . 74

John S. Boyles, District Manager
Bureau of Land Management
Las Vegas District

Dear Sir:

I wish to send this letter for the hearing record concerning the future of the Red Rocks Lands. I am in full support of the efforts to preserve this valuable resource for future generations. I support any new plans in addition to the 1968 plan that will further limit development or destruction of this precious resource.

Sincerely,

Linda R. Loetterle

Linda R. Loetterle
3681 Rosecrest Cir. So.
Las Vegas 89121
458-8420

Sunday 4-21-74

*John Boyles
Bureau of Land Management

Dear Mr. Boyles,

I am writing to express my opinions concerning the master plan and Enviremental Impact Statement for the Red Rock Recreation Lands.

It is with great concern that I have followed the consequent hearings and meetings about the Red Rock area and much that has been said is of paramount importance.

The Red Rock area is indeed a beautiful and unique area that should be protected from exploitation on any level. Its wilderness beauty is easily jepardized by any disturbance such that further developement would provide. It is with my deepest emotions that I request you to accept proposition number 4 as the posetion that the BLM should take. Please, no further development should be allowed to take place. You know, the area is not "undeveloped" right now.

The problem, of course, with any wilderness area is a system of management adequate to provide the needed protection of its "virgin" beauty. Therefore, an increased staff for management purposes should really be made available to the area. But the last thing Red Rock needs is further development of any kind.

Thank You Sincerely,
Terry R Weeteling
TERRY R. WEETELING

Bureau
APR [illegible]
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Dear Sir

It has been brought to my attention that plans are being made to develop the Red Rock area. I beleive this area should be left as is, for further development would not only take away from the natural beauty of the area but could also upset the delicate balance of the desert environment. I hope you support the same view as I.

Sincerely

Dave Eads
Student WHS

ROUTE	ACTION	INIT.	DATE
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FILE CODE________

1 - ACTION 2 - [illegible]

APR 23 1974
DISTRICT OFFICE
Las Vegas, Nev.

Dear Mr. Boyles;

I am a local resident who was born and raised in the Las Vegas area. During the last 5 years I have spent much time hiking and camping in the Red Rock Canyon area and for nine months I had the privledge of living at Pine creek in a caretakers capacity.

I found the Environmental Impact Statement to be extremly shallow in its treatment of the area. I was particularly amazed to find that its conclusion was that full development of the area would have a benificial effect on many aspects of the environment as compared to its present state of use. I have heard the arguments in favor of this theory but I am certainly not convinced. More people using an area will have a higher impact simply by their very presence. This should be obvious to any clear-thinking individual and I cannot conclude that this statement is anything more than a snow-job and a poor one at that.

The basic problem seems to rest on the theory of "development" set forth in the Master Plan. We seem to believe that we, as human beings have a basic right to "use" natures recources in any way that we please. This extends to the idea of recreation. We want to "get" as much enjoyment from a particular area as we can. Even our efforts to preserve natural areas are basecally selfish motivations. What we fail to recognise is that Nature and every one of her creatures has an intrinsic right to exist for its own sake. Nature has a right to respect and dignity from human beings.

We, as humans, are just now becoming aware of our responsibilities in the cosmic plan. This awareness is being forced upon us by such urgent issues as air and water pollution, overpopulation, and the current energy crisis. This awareness is becoming manifest in the rapidly changing values of the public. More and more people are turning to other non-mechanical forms of recreation. Soon there will be a greatly increased demand for areas that are closed to vehicular traffic, where people can get away from the noise and pollution of auto exhaust.

It is the responsibility of our governmental agencies and officials to anticipate the needs of the public and plan for long range future needs. These undisturbed areas are as essential to the well being of our nation as all our other resources.

This decision which confronts us now is of the utmost importance. It is important because the Red Rock area is a place of exceptional beauty and uniqueness. It is also important because Red Rock Canyon is an area of exceptional fragility. It wouldn't take long for the sensitive eco-structure of the area to be utterly destroyed by overuse and once it is gone, it is gone for all time. This would be a tragic and irreversible loss. This decision should be approached with great wisdom and extreme care.

In conclusion I hope that you will not build any more roads or picnic tables in Red Rock Canyon. This area is designated as an area for recreation so let us develope it for non-mechanical forms of recreation. Better still, let us use the money to hire more management personel to protect the area from vandalism and careless persons. May God be with you.

ROUTE	ACTION	INIT.	DATE
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FILE CODE

1 - ACTION

Humbly,

Gregory Roy McKenzie

Gregory Roy McKenzie

I request that this letter be included in the hearing record concerning the environmental impact statement on the Red Rock areas. I support the fourth plan, no more development of the area other than more rangers to supervise the area. I am a registered voter

Daniel J Markeson

Dan Markeson
5900 Gypsy Ave
Las Vegas, Nev.
89102

Bureau of Land Management
APR 23 1974
LAS VEGAS DISTRICT OFFICE
Las Vegas, Nevada

ROUTE	[illegible]	INIT.	DATE
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FILE CODE__________

1 - ACTION 2 - INFOR.

Bureau of Land Management
APR 24 1974
Las Vegas

April 21, 1974

Dear sir,

Please include this letter in the official hearing record for Red Rock Canyon Recreation Lands. I am of the opinion that the 1968 Master Plan forr the area should without a doubt be scrapped. There should definitely be no development above this fantastically beautiful escarpment or at any of the canyon mouths. Any development below the escarpment should be limited to the barest minimum, and the infamous Crestline Scenic Drive should absolutely never be built. The fact that the BLM has never studied this area for possible Primitive Area designation points to the need for a new comprehensive study of the area, with management policies to prohibit off-road vehicles and emphasize the natural beauty of the area attendant. I look forward to enjoying my upcoming visits to Red Rock. Thank You.

Mike Griffin
6532 N. 60 th Street
Paradise Valley, Arizona
85253

ROUTE	ACTION	[illegible]	DATE
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FILE CODE____________________

1 - ACTION 2 - INFOR.

Box 87
Cortaro, Ariz. 85230
April 21, 1974

Bureau of Land Management
APR 24 1974
Las Vegas District

John Boyles, BLM District Manager
P.O. Box 3
Las Vegas, Nevada 89101

Please enter this letter as part of the Hearing Record

Dear Mr. Boyles:

Several years ago on a trip to Las Vegas I came across Red Rock. It was a place on the map and needing a place to camp for the night, I decided to find out what Red Rock was. I was pleasantly surprised. Now, I see that BLM wants to turn it into a city park type of place. That is not the highest and best use of Red Rock. Therefore, I urge you to reconsider. I believe there should be limited development below the escarpment and none above. The canyon mouths should remain undeveloped and no roads should be planned. Off-road vehicle use should be prohibited and the Bureau should adopt other such policies that will protect and enhance the natural beauty of the area. The Bureau should consider studying the area for a possible Primitive Area. In addition, the 1968 Master Plan should be discarded and new up-to-date studies resulting in a meaningful Master Plan and Environmental Impact Statement should be begun immediately.

What I viewed as a "gem" near Las Vegas should be, above all else, protected and not turned into a recreation area.

Sincerely,

Terry L. Lane

Terry L. Lane

ROUTE	ACTION	INIT.	DATE
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FILE CODE

22 April 1974

Mr. John S. Boyles, District Manager
Bureau of Land Management
Las Vegas District
P. O. Box 3
Las Vegas, Nevada 89101

Dear Mr. Boyles:

In view of the recent controversy arising out of the so-called improvements to be made in the upper and lower areas of Red Rock district, I sincerely hope that you will give every consideration to limiting any type of improvement in this area. Too many times we have seen such unspoiled, beautiful nature areas, spoiled by so-called improvements. I therefore urge you to consider only a very limited type of improvement for these areas.

Very truly yours,

Beverly Bradley

(Mrs.) Beverly Bradley
4410 Denia Circle
Las Vegas, Nevada 89108

Rp 4/25/74

Bureau of Land Management
APR 24 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Joseph Ford
1303 Tamarack Avenue
Las Vegas, Nevada
89106

Mr. Boyles:

In my biology class, the teacher brought this issue, What to do with the Red Rock Area, to the class's attention. He thought it was relevant to our course of study and that since we live here and may continue to do so for the rest of our life it would be of great importance to us.

Some of the proposed ideas are: complete development, leave it alone as it is, half fully developed and half left alone, resticted above the cliffs, and no overnight camping, overnight camping and hiking.

My idea of what should be done with this area in time of question is as follows: I think that the areas in the front of this area should have the already dirt roads paved and some shading devices put up for rest area purposes. Then the areas deeper in the mountains and above the cliffs should be resricted completely to hiking and overnight camping. With these provisions also the areas should be under survenance so that vandals can not destroy the area. But, something must be done, because if it isn't, with Las Vegas growing, so rapidly, we may not have a Red Rock Area to enjoy.

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FILE CODE________________

1 - ACTION 2 - INFOR.

A concerned Las Vegan,

Joseph Ford

Joseph Ford

Bureau of Land Management
MAY 1 1974
LAS VEGAS DISTRICT OFFICE
Las Vegas, Nevada

April 25, 1974
Western High
Las Vegas, Nev.

Dear Mr. Boyles,

I am writing to you in the intrest of the development program being proposed for Red Rock Canyon. I feel that this is a very important subject for our county and all who use the Red Rock Recreational Area.

I feel that it is to our advantage _not_ to develop in the major canyon area. The development of these areas would take away much of the natural beauty of our Park. Also, I agree that there should be no development or roads on or west of the sandstone bluffs.

One of the best ways (which I see you have noted also) in which to keep our beauty in this park is to keep the off road vehicles away from the area. Also day use of the park with overnight permits will eliminate a lot of destruction of the park. Not having open fires will also

helpin the preservance of some
of the natural beauty in this
area.

One of the items which
you mentioned in your
statement was the fact to have
manned guard gates in
the park. I feel that this
is the wrong way to attempt
keeping certain people from
making trouble. A better idea
would be to have rangers to
patrol the area in the parks.
This would discourage people
from making trouble and
keep things under control.
I wouldn't like to be stopped
and asked why I was going
into the park, how long I'd
be there, and given a set
of rules to follow. If there
where rangers, people would
be notified easily if they
did something wrong.

I feel strongly about the
use and development of this
area and I hope my
opinion means something
in your office.

Renee Gilmore
5208 Santa Catalina
Las Vegas, Nev.
89108

April 22, 1974

Mr. John S. Boyles:

My view on the development of the land in mind, is to have particial development on both the upper and the lower escarpments, with a limited amount of use being available to each and every visitor. I believe this area is needed to be kept as a reminder of the beauty of the desert for the future times in Nevada, may no longer be a natural reminder

Sincerely,

Bill Kachele,

Student of Western High School

ROUTE	ACTION	INIT.	DATE
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I - ACTION [illegible]

BUREAU OF LAND MANAGEMENT
APR 24 1974
LAS VEGAS DISTRICT OFFICE
Las Vegas, Nevada

2510 No. Jonathan
Tucson Az. 85705
April 20, 1974

John S. Boyles, District Manager
B. L. M.
Las Vegas District
P.O. Box 3
Las Vegas

Bureau of Land Management
APR 24 1974
LAS VEGAS
DISTRICT
Las Vegas

Dear Sir:

I am writing in regards to the Red Rock Canyon Recreation Lands. I support the following points:

1. That there should be limited development below the escarpment and no development above. Also, no development at the canyon mouths and plans for the Crestline Scenic Drive should be abandoned.
2. Good management policies must be formed and carried out. They should include restricting Red Rock to day-use only, prohibiting off-road vehicle use, emphasis on natural and aesthitic use of area.
3. Area should be studied as BLM Primitive Area possibility.
4. The out-dated 1968 Master Plan should be abandoned. Up-to-date studies which would lead to a new Master Plan are needed. Also need new Environmental Impact Statement.

Please make my statement part of the hearing record.

Thank you.

Sincerely,

Ms. Lee Oler

Las Vegas, Nevada
April 23, 1974

Bureau of Land Management
APR 24 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Bureau of Land Management
Las Vegas, Nevada

Dear Sir,

My motive for writing this letter is purely selfish but it expresses my opinion about proposed changes in Red Rock Canyon.

How can anyone improve something that is well nigh perfect. It is perfect because it is the way it was made -- so far. The beauty of the flora and fauna is unsurpassed. Adding roads, camping facilities, and buildings will not improve that. In fact, adding these kinds of things will have an adverse effect on the wildlife due to noise and pollution brought about by increased traffic.

Red Rock is for people who are interested enough to go there in the first place to hike, or soak in the beauty of its naturalness. I am selfish about this because I think this area should be for Las Vegans, their friends, fellow Nevadans and nature lovers. Roads bring cars and people, some of whom could care less about the canyon, except for racing and littering.

Is there anyplace else where one can go to escape the pressures of every day living?

But now traffic in that area and the hurry and scurry follow you, with pollution close behind. It is an awesome sight to look toward the west and see those towering mountains as clear as a bell. Is there anyone that really and truly wants to change that?

As you have ascertained by now I'm "agin" progress because any so-called progress in Red Rock Canyon would deter from its beauty. Man has shown in countless ways that he cannot improve on Nature.

Sincerely,
D. A. Dawson

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FILE CODE

1 - ACTION 2 - INFOR.

APR 25 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

April 21, 1974

Mr. John S. Boyles, District Manager
BLM Las Vegas District
P.O. Box 3
Las Vegas, Nevada 89101

Dear Mr. Boyles:

I am writing this letter in regards to the plans which have been proposed for the Red Rock area.

I believe that this area should be protected. This could possibly be accomplished by limited development both above and below the escarpment. It would be nice to have a few campsites and people who would protect and maintain the area. By restricting the power objects to a certain area you would be protecting and preserving the beauty and life of this desert area. Proper use and maintainence of this land may protect it from people who misuse it. To much of our country has been destroyed by mismanagement, and misuse.

Sincerely,

Ann Horden
Ann Horden

ROUTE	ACTION		DATE
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1 - ACTION 2 - INFO

April 18, 1974

John S. Boyles, Dist. Manager
BLM
Las Vegas, District
P.O. Box 3
Las Vegas, Nev. 89101

Bureau of Land Management
APR 25 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Dear Sir:

I would like to express my feelings on the matter of turning Red Rock into a wilderness area. I am extremely pleased with the idea and I would also like to recieve any information you could give me concerning this proposal. Thank you.

Sincerely,

Jeffrey J. Dahl

My address
Jeffrey J. Dahl
6309 Lawton Ave.
L.V., Nev. 89107

Mrs. Karl Eugene Spatz
1619 South Fourteenth Street
Las Vegas, Nev. 89105

24 April 1974

John S. Boyles, District Manager
Bureau of Land Management
Las Vegas District
P. O. Box 3
Las Vegas, Nevada 89101

Dear Mr. Boyles:

I am writing this letter for the hearing record in support of the Nevada Open Spaces Council's eighteen-point plan for the low level development of the 77,000-acre Red Rocks Recreation Lands as well as for the proposed name change.

This natural and extraordinarily beautiful area in such close proximity to our burgeoning city is an asset we can never replace if it is once desecrated by over-development or by prolific and irresponsible public use.

I urge you to take the necessary steps in order that the use of this area will be carefully planned and managed to preserve its aesthetic beauty and its value as a teaching tool for scientific studies.

With great concern and sincerity,

Mrs. Karl E. Spatz

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		Yp	4/25/74

FILE CODE

1 - ACTION 2 - INFOR.

830 Ave. A, apt. 3
Boulder City, Nev.
April, 24, 1974

John S. Boyles, District Manager
Bureau of Land Management
Las Vegas District
P.O. Box 3
Las Vegas, Nevada 89101

Dear Mr. Boyles:

Please include this letter in the Hearing Record concerning proposed development of the Red Rock Canyon Recreation Lands.

As a citizen of Clark County and one who appreciates the natural beauty that exists in this area, I strongly urge you to preserve Red Rock Canyon in its present natural state.

In particular I urge that no development whatsoever be allowed above the escarpment in the Park. Any such development would ruin much of the primitive beauty and animal habitats that now exist above the escarpment. Further, the use of off-road vehicles should be prohibited, and the area should be limited to day-use only. Perhaps in the future Red Rock should be studied for classification as a BLM Primitive Area.

If the above steps are taken now, Red Rock Canyon Recreation Lands can be preserved in its natural state. If they are not one of the finest and most beautiful areas in southern Nevada will become scarred and littered by man. You must act to preserve it.

Sincerely,

Michael McFetridge

Michael McFetridge

April 14,

Bureau of Land Management
APR 26 197
Las Vegas District Office

Dear Mr. John S. Boyles,

Since I cannot attend the hearing in regard to the Red Rocks Recreation Lands, I would like my letter to go on record.

In December, I flew into Las Vegas to play in a bridge tournament and as I flew in, I couldn't help but notice how much land there was and how much development around. I wanted to cry, stop! Development is miles from town and some seems so unnecessary. It's about to reach the scenic, beautiful area of the Red Rocks and it is simply no need in this world to have a huge recreation area for people there. Such treasures there are best to love and protect, not to have a wide-spectrum recreation area. Las Vegas alone is recreation enought!

Let's all try to sell the

people on the idea of freedom for the bighorn sheep and other animals And let's have a plan (resource preservation) essential to their survival.

Thank you.

Mrs. Mervyn Mazza
40 Corte Cordova
Greenbrae,
Ca

ROUTE	ACT. BR.	INIT.	DATE
D.M.			
CH., R.M.			
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STATE R.A.			
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ESMER. R.A.			
[illegible]			9/26/74

FILE CODE

1 - ACTION 2 INFOR

LAW OFFICES
LEWIS & ROCA

April 20, 1974

John S. Boyles, District Manager
Bureau of Land Management
Las Vegas District

Dear Mr. Boyles,

I am a student at Northern Arizona University, in Flagstaff. I have been following the Red Rock issue for some time now. I am concerned about it as much as I am about similar areas in Arizona. Such magnificent areas as the Red Rock area must be protected for all Americans.

I urge that:

1) There should be limited development below the escarpment and no development above. There should be no development at the canyon mouths, and plans for the Crestline Scenic Drive should be abandoned.
2) Good management policies must be formulated, and the personnel hired to carry them out. Policies should include restricting Red Rock to day use only, prohibiting off-road vehicle use, and emphasizing the natural and aesthetic values of the area.
3) Red Rock should be studied as a possible BLM Primitive Area.
4) The outdated 1968 Master Plan should be abandoned; up-to-date studies resulting in a meaningful Master Plan and Environmental Impact Statement are desperately needed.

Please protect this beautiful area with as much care as you can.

Sincerely,

Erin Miller

of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

John S. Boyles, District Manager
Bureau of Land Management
Las Vegas District
P.O. Box 3
Las Vegas, Nevada 89101

Dear Sir,

I would like to go on record in support of the Nevada Conservationists' position regarding the level of development for the Red Rock Canyon Recreation Lands near Las Vegas.

I agree with them that there should be limited development below the escarpment and no development above, and that there should be no development at any of the canyon mouths. And I hope that the BLM will abandon plans for the construction of the Crestline Scenic Drive.

I also hope that the BLM will emphasize control measures for ORV use in the area. The emphasis should be on the preservation of the natural values and the preservation and restoration of natural scenery. The maintenance of such values will of necessity require strict controls of ORVs to minimize or eliminate the damage that they cause.

Please include this letter in the Hearing Record. I appreciate the opportunity to make these comments.

Sincerely,

Don Campbell

ROUTE	ACTION	INIT.	DATE
[illegible]		JB	4/25
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Sulinski		cp	4/26/74

FILE CODE____________

1 - ACTION 2 - INFOR.

P

John S. Boyles, Dist. Manager
BLM, Las Vegas Dist.
Box 3
L V, NV, 89101

APR [illegible] 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Dear Mr. Boyles, Apr. 24, 1974

I am writing as a matter of the record in support of the proposal by the citizens for a larger degree of preservation of Red Rock Reservation lands in its development as a park. I believe the proposal by the BLM will have too large an impact on the fragile nature of the Red Rock lands.

Thank You,

Rick Isom
4545 E. Emerald Av.
Las Vegas, NV
89120

ROUTE	ACTION	INFO.	DATE
[illegible]			
[illegible]			
Sulaski		Rjp	4/29/74

FILE CODE
1 - ACTION [illegible]

APR 29 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

To: John S, Boyles, District Manager
Bureau of Land Management
Las Vegas District
P.O. Box 3
Las Vagas, Nevada 89101

From: Dave Boroughf
208 Vassar Street
Reno, Nevada 89502

Subject: Statement on the Red Rock Recreation Lands Enviromental Impact Statement.

Dear Sir,

April 23, 1974

Please add the following brief comments to others received for the Draft Environmental Impact Statement on development at the Red Rocks Recreation Lands.

The EIS discusses impacts of seven alternate development schemes including those of the Original Master Plan. This 1968 Plan is a sham and would cause an incomprehensible catastrophy at Red Rocks; it never was and never will be the way to treat a treasure like Red Rocks. The remaining 6 alternatives call for less development, and are proportionately more suitable to the area. However, they still all call for a management scheme that places recreational use above preservation of the irrepacable natural resources there. I support an eigth alternative, one that would allow no development west of the Bluffs and only minimal development below them.

I've been to Red Rocks twice now, each time amazed at the fragility of the resource. The area's proximity to Las Vegas really spooks me, and I dread the thought of potential damage the hordes there could do. It will indeed take intensive management of man, the visitor, to keep him from ruining the very values he(presumably) is seeking. Values such as Indian archaeological sites, outstanding flora in a remarkable blend of lower Sonoran/Pinyon-Juniper Woodland, and rare or endangered species such as the golden eagle, gila monster, and desert bighorn sheep make it sickeningly absurd to even rate recreation as a priority. Good Lord, Red Rocks should be a Wildlife Refuge! To turn it into an extension af that plastic paradise not 20 miles distant should be grounds for criminal prosecution. The value of an unaltered environment in Nevada is alone enough to warrant protection of Red Rocks, discounting it's myriad historical and biological assets.

None of the alternatives acknowledges this. Instead, they address themselves to ways of accomodating every damned "legitimate" use the masses chose to throw at it. This is lunacy! The EIS should identify the Maximum visitation permissable in harmony with a primitive-type recreation experience. If you must accomodate the hordes, confine your your lofty schemes to do so to the concessionares (public or private) at the inholdings around the Spring Mt, Ranch, Blue Diamond, or Fine Creek. Development elsewhere should be only the minimum necessary for the protection of the resource.

At a mere 77,000 acres, Red Rocks would be hard-pressed to serve as a playground for Las Vegas. It should not be expected to absorb the assortment of recreating insomniacs (including bacpackers, ORVers, and Sunday drivers) that will surely drive out any and all remaining remnants of wildness.

Sincerely,

Dave Boroughf

Dave Boroughf

John S. Boyles, Dist. Man.
BLM, Las Vegas Dist
Box 3
Las Vegas, NV, 89101

Bureau of Land Management
APR 29 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Dear Mr. Boyles, Apr. 24, 1974

I would like to make a matter of the record that I support the citizen's proposal for making the Red Rock Recreation lands a park. I believe the impact of the BLM proposal on the fragile nature of Red Rock lands will be too great.

Thank You,

Sharon Coon
4545 E. Emerald Ave.
Las Vegas, NV
89120

ROUTE	ACTION	INIT.	DAT
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FILE CODE

1 - ACTION 2 - [illegible]

Bureau of Land Management
APR 30 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

April 26, 1974

Dear Mr. Boyler,

I am presently a sophomore at Western High School. In my Biology class I heard of the recent attention being given to the Red Rock Canyon area. I, like many other interested citizens, want the best thing to be done. I have heard of the proposals to make it a recreation area, build raads and bring in commercialism. I would like to express my own opinion that I believe it should be a protected area. There are many natural wonders found there and no where else. If the area is to continue in the state it is now, many of these things will be destroyed if not already. If it became a protected wilderness area, something could be done about it. The Red Rock Canyon area could be a source of ejoyment to all who knew how to make better use of it.

Thank you for your time.

Sincerely,

Pam Griffiths

Pam Griffiths

ROUTE	ACTION	INIT.	DATE
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✓ Sulenski		Rp	5/1/74

FILE CODE____________

1 - ACTION 2 - INFOR.

APR 29 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Alan Mahterian
Western High
Las Vegas, Nev.
Biology Class (502)
Mr. Watkins.

Dear Sir:

I have understood that the city of Las Vegas is undeciding on whether to convert the redrock area into a Wildlife area or a shopping center with Hotels, and stores and other unnecessary things. But I would like to tell you that if they do decide to build all that, it will wreck the environment and waste land that maybe some day very useful and could help Las Vegas with our population problems. I remember about 4 or 5 years ago when my family moved to Las Vegas. We liked it because we always had a place where we could go (Redrock) to have lunch or hike on the mountains that were so magnificent and beautiful works of nature. Now, some people want to take that away and put in stores just so they will make money and gain the name of paving buildings on Mts. I would appreciate it if you could let everyone in the L.V. area realize the importance of conserving that land.

Yours Truly

Alan Maktuman
Student of Western High.

ROUTE	ACTION	INIT.	DATE
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STATE R.A.			
CAL. R.A.			
ESMER. R.A.			
[illegible]		Rp	4/29/74

FILE CODE__________

1 - ACTION 2 - INFOR.

1885 South Jackson Street
Denver, Colorado 80210
April 24, 1974

Bureau of Land Management
APR 30 1974
LAS VEGAS DISTRICT OFFICE
Las Vegas, Nevada

E. I. Rowland, State Director, Nevada
Bureau of Land Management
Room 3008 Federal Building
300 Booth Street
Reno, Nevada 89502

Dear Director Rowland:

Please include this letter in the public hearing record for the Red Rock Canyon Draft Environmental Impact Statement. Thank you.

I have recently moved from Nevada to Colorado, and I am familiar with a number of the wild and scenic BLM-administered areas in the state. The Red Rock area is one of the most beautiful spots I have ever seen. The red rock, the high, steep-walled canyons, the diversity of vegetation, including bright redbud and rare ferns, the precious springs and potholes, the pinon-juniper woodland, the ponderosa pine, the many native animal species, including bighorn sheep and the rare gila monster, the caves, the archeological treasures---all are simply outstanding. I support preservation of Red Rock's priceless and irreplaceable natural values as a first priority for the BLM. I feel further development is acceptable only when it is needed to protect the natural environment.

I have read the EIS, other BLM material on Red Rock and the master plan, and am familiar with some of the area's history. I feel it is a tragedy that Segment A of the Red Rock Scenic Drive has already been built before this public input process on the various management alternatives. The road may be better than many, but it is a terrible, obtrusive scar on the landscape. I feel the BLM should have done its homework better and presented the public with 1974 management alternatives, not outdated 1968 ones.

I hold the following basic assumptions concerning management of a unique, beautiful, and fragile area such as Red Rock: enhancement by man is not possible because nature has already done a magnificent job; the area should be experienced on its own terms and the meaning of recreation as "re-creation" is truly appropriate; one of the area's prime purposes is inspirational; and the area cannot be all things to all people without its total destruction.

After hiking up one of the canyons for half a day, I saw my first bighorn sheep. To me, this experience is worth hundreds of hours of driving and sightseeing by road. Recreation planning at Red Rock should change from valuing quantity to quality. Aldo Leopold has written the following words on this theme:

> There are those who decry wilderness sports as 'undemocratic' because the recreational carrying capacity of a wildnerness is small, as compared with a golf links or a tourist camp. The basic error in such argument is that it applies the philosophy of mass-production to what is intended to counteract mass-production. The value of recreation is not a matter of ciphers. Recreation is valuable in proportion to the intensity of its experiences, and to the degree to which it differs from and contrasts with workaday life. By these criteria, mechanized

> outings are at best a milk-and-water affair.
> Mechanized recreation already has seized nine-tenths of the woods and mountains; a decent respect for minorities should dedicate the other tenth to wilderness.

Red Rock offers a totally different scene from the Strip in Las Vegas. The area should not be further civilized and compromised in the direction of a man-auto-centered playground. I therefore support the following measures to preserve Red Rock:

1. Classification of the south end of Red Rock Valley, all lands west of the Sandstone Bluffs, and La Madre Ridge as BLM primitive areas.
2. No new road development, except for completion of the scenic loop road along existing routes. The loop road should be one-way travel.
3. No new development and roads at the canyon mouths, including Pine Creek and Brownstone Canyon. The existing dirt access roads should be closed to vehicles and access limited to foot and horseback travel.
4. Off-highway driving should not be permitted anywhere in Red Rocks.
5. The Red Rock Summit Road should not be improved.
6. Interpretation and education at Red Rock should be given top priority. Rangers should be available to meet the public at entrance gates on all the main road entrances to Red Rock. Rangers should also patrol the area by horse and give natural history programs on the values protected at Red Rock and how to appropriately use the area.
7. The visitor center should be located on the edge of the Red Rock Lands, near the Charleston Boulevard entrance.
8. Trails should be contructed to protect sensitive areas from further destruction. Trails should be narrow and blend in with the landscape, as this makes them much more enjoyable to travel.
9. Picnic areas should be a short walk away from parking turnouts so the natural environment may be better appreciated.
10. Open fires should not be permitted except in designated picnic sites and gathering of dead wood, rocks, and other natural objects should be prohibited.
11. Spring Mountain Ranch should be used for some type of natural history education center, with picnic areas on the fringe of the developed area.
12. Red Rock should be designated a day-use area. A limited number of permits could be issued for back-country horse and foot travel requiring overnight camping.
13. The possibility of public transportation should be explored. Ronald Walker, Director of the National Park Service, has commented on Americans' need to reduce wasteful uses of energy and yet still enjoy visits to the national parks. The Park Service has shown this can be done by using new and better ways to see the parks, such as horsedrawn vehicles, mini-trains, shuttle buses, and mini-vans. Walker has stated, "Get away from your automobile and there is a whole new world of beauty and discovery waiting in the parks." (Congressional Record, March 27, 1974, Page E 1851).
14. Lastly, burro numbers should be controlled so they do not compete with native wildlife species or destroy the carrying capacity of the land.

In keeping with preservation of Red Rock's natural values, the name of the area should be changed to the Red Rock Natural Area. Thank you again for the opportunity to comment on the future of Red Rock.

Very Sincerely,

Amy Mazza-Scholl

cc: John Boyles, Las Vegas District Manager ✓
Rogers C. B. Morton, Secretary of the Interior

1924 Sweeney Ave.
Las Vegas, Nev.

State Director, B.L.M.
Reno, Nev.

Dear Sir:

I'm very opposed to Red Rock area being under B.L.M. management. I feel that the B.L.M. is rapidly becoming a law unto its self ignoring the peoples wishes. I feel this area should be under the State Park System -

Sincerely
Myrtle A. Hancock

Las Vegas, Nevada
Thursday - April 11-1974

Mr. E. I. Rowland, State Director
Bureau of Land Management
Nevada State Office
300 Booth Street
Reno, Nevada 89502

Dear Mr. Rowland:

My sincere thanks to you for the loan of the Draft Environme Statement for the Red Rock Recreation Lands, and I return to you herewith.

It was so fascinating to read about this land. We have li with it for 25 years but never really knew all about it un reading the descriptive pages of this book. We are most grateful to you and to your staff.

Yours very truly,

Paula Clark

(Mrs.) Paula C. Clar
621 Pecos Way
Las Vegas, Nevada 89121

RECEIVED
Bur. of Land Management
10:00 A.M. MAR 28 1974
NEVADA STATE OFFICE
RENO, NEVADA

Las Vegas, Nevada
Tuesday - March 26-1974

Department of the Interior
Washington, D. C.

Dear Sirs:

I wish to submit my very definite comments regarding the Red Rock area adjacent to Las Vegas, Nevada, over which there is controvery as to which division of land control will rule this land.

Nevada's Congressman, David G. Towell, advises me that the Department of the Interior "has completed its analysis of the various proposed alternatives and has suggested that the site be developed as a recreation area under the management of the Bureau of Land Management". Congressman Towell does not support this proposal, and neither do I. It is my very firm conviction that the Red Rock area be conveyed to the State of Nevada for management under the State Park System.

This is NEVADA land. We don't have too much of it that is beautiful and worthy of being made into a recreation area. This particular land is very near Las Vegas, Nevada, and has been enjoyed by all of us for many years as a picnic spot, Sunday-drive spot, and a place to just stand still and admire its fantastic beauty. I have been a resident of Las Vegas for twenty-five years and I am of the very firm opinion that this Red Rock area should belong to Nevada, and be controlled by our State government, NOT the Bureau of Land Management.

I speak for my family, and for a great many of my friends. I hope sincerely you will listen to us and to our very fine Congressman, David Towell.

Yours very truly,

Paula C. Clark

(Mrs.) Paula C. Clark
621 Pecos Way
Las Vegas, Nevada 89121

Office of County Clerk

CLARK COUNTY COURT HOUSE
LAS VEGAS, NEVADA

LORETTA BOWMAN
COUNTY CLERK

EX-OFFICIO CLERK OF:
EIGHTH JUDICIAL DISTRICT COURT
BOARD OF COUNTY COMMISSIONERS
BOARD OF EQUALIZATION
COUNTY LICENSING BOARD
CLARK COUNTY SANITATION DISTRICT NO. 1
LAS VEGAS METROPOLITAN POLICE COMMISSION

FRANCES McCREA
ASSISTANT COUNTY CLERK

TELEPHONES
DAY: 385-3156
NIGHT: 386-4415

April 23, 1974

State Director
Bureau of Land Management
300 Booth Street
Reno, Nevada 89502

Dear Sir:

As a resident, landowner and taxpayer in Southern Nevada, I would like my views of the development of the Red Rock area noted.

I feel any park developed in the Red Rock area should be under the jurisdiction of the Park Department of the State of Nevada and not under the United States Department of Interior.

It is my personal opinion that the State of Nevada is capable of good management and development of parks within the boundries of this State.

Cordially yours,

Loretta Bowman

LORETTA BOWMAN, County Clerk
and Ex-Officio Clerk of the
Eighth Judicial District Court
of the State of Nevada in and
fo r the County of Clark.

lb.eh

QK-
5/20

United States Department of the Interior
Bureau of Land Management
Nevada State Office
Room 3008, Federal Building
300 Booth Street
Reno, Nevada 89502

Bureau of Land Management
MAY 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Gentlemen:

I have reviewed the Draft Environmental Statement for the Red Rock Recreation Lands and wish to voice my preference for Alternative #3. I have decided this is the best compromise between the various philosophies of land use and user group preferences.

Please advise me of the current Status and future decisions regarding the Red Rock Recreation Lands.

Respectfully yours.
Donald E Potter MD

Donald E. Potter, MD
P.O. Box 602
Chanute, Kansas 66720

VAN'S BUILDERS SUPPLY, INC.
1422 WESTERN AVE. • LAS VEGAS, NEVADA 89102

5/6
R.K.J.
5/6

May 1, 1974

1974 MAY 6 AM 10 00

of Land Management
1974

State Director, BLM
300 Booth Street
Reno, Nevada 89502

Dear Sir:

As a resident of Clark County for the last nineteen years, and owning various businesses in the same County, I feel that I can express my opinion in regards to the proposals made reference the Red Rock area. I feel that the Red Rock Area, and the County in general, has more to gain in being made into a state park, than into a recreation area. As a state park, it has more of a chance in remaining a natural area. As a recreation area, there is bound to be a lot of unnecessary destruction of the land.

Sincerely,
Robert W. Van Norman
Robert W. Van Norman, President
Van's Builders Supply, Inc.

USG® ROOFING and SIDING for BEAUTY and PROTECTION

r

4/25

CRAGIN and PIKE

INSURANCE

320 SOUTH THIRD STREET ■ P O BOX 30 ■ LAS VEGAS, NEVADA 89101 ■ 382-1111

FRANK C. KERESTESI
ROBERT M. HOENISCH
WILLIAM E. SMITH
JOHN R. WORCOTT

April 23, 1974

State Director, BLM
300 Booth Street
Reno, Nevada 89502

Dear Sir:

I am in favor of the State of Nevada's State Park system attempting to obtain the Red Rock area to operate it as a recreational area under the State of Nevada's Park system.

I feel that the Nevada State Park system does an excellent job in managing the State Parks, in fact it is a much better organized department than any of the Federal parks I have been in.

Sincerely,

Robert M. Hoenisch
Robert M. Hoenisch

RMH/jh

4/22
4/23
4/25

April 18, 1974

COPY

Mrs. Carl F. Janish
P. O. Box 12208
Las Vegas, Nevada 89112

Dear Mrs. Janish:

Thank you for your letter expressing your viewpoints on the Red Rock Canyon development proposals. I am forwarding a copy of your letter to the Bureau of Land Management, Reno, as additional comment to their Environmental Impact Statement.

Presently, our authority involves only those lands comprising the Spring Mountain/Pine Creek Ranches which were recently purchased and an operations agreement with the Bureau of Land Management for the administration of lands at the north end of Red Rock.

Your views are appreciated and we will be happy to consider them in recommending development alternatives for Red Rock.

Sincerely,

Eric R. Cronkhite
Administrator

ERC:lk

cc: Ed Rowland, BLM

P.O. Box 12208 Las Vegas, Nevada
89112

April 11 - 1974

Dear Mr. Cronkite -

Concerning proposals and plans for the Red Rock Canyon area:

① Please - NO "development" whatever above the escarpment! (the only result, as we can see, of roads up there would be restrictions, disturbances, and eventual elimination of whatever wildlife is still up there.)

② And please - DAY USE ONLY for "below" the escarpment!

a) The area isn't extensive enough to "carry" campgrounds + their facilities, and all the extra use, traffic, and environmental depredation that "campgrounds" would bring.

b) Overnight facilities just aren't necessary this close to a city -

c) The area is ecologically too fragile — the scars of day use, with dune buggies + trail bikes, are bad enough — don't add the possibility of more!

Most sincerely,

Carl and Jeanne Janish

RECEIVED
APR 15 1974
NEVADA STATE
PARK SYSTEM

B 4/2
Actio
4-2

720 Brookfield Drive
Reno, Nevada 89503
April 24, 1974

Mr. E. I. Rowland, State Director
Bureau of Land Management
Room 308 Federal Building
300 Booth Street
Reno, Nevada 89502

Dear Sir:

Please include the following comments in the hearing record for the Red Rock Master Plan Environmental Impact Statement.

The Red Rock Recreation Land encompasses an area that is unique in its geological and biological features, in its extraordinary beauty, and in its fragility. Because of the location of this area--only fifteen miles from the largest city in Nevada--it is particularly subject to overuse, misuse, and even vandalism. We observed damage to the area several years ago when we had the pleasure of doing some walking in the Spring Mountains, and we understand from friends in Las Vegas that this damage has increased substantially. For this reason, we feel that the analysis of the 1968 master plan and the alternatives to this plan are inadequate.

Instead we suggest a plan that would include primitive area classification for all land west of the sandstone bluffs, Le Madre Ridge, and the south end of the Red Rock Velley, and a moratorium on any new road-building in the area until the possible impact of such roads can be analyzed. No motor vehicles should be allowed off established roads because of the damage these vehicles do to the terrain. A foot trail system that will protect certain sensitive areas should be established, but these trails should be narrow and unobtrusive. The picnic areas should preferably be walk-in areas, and open fires should not be permitted within the park. Perhaps it will be necessary to establish a permit system for anything but day use.

The emphasis in the plan should be on preserving the resource and the scenic beauty of the area and not on providing unlimited recreation. This is an area that too much development will ruin quickly and one that will not recover from the mistakes of man.

We appreciate the opportunity to express our views on this important issue.

Sincerely yours,

Richard C. Sill by M.S.
Richard C. Sill

Marjorie Sill
Marjorie Sill

Bureau of Land Management
MAY 1 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, N.

Jim Bernabei
Western High School
4601 W. Bonanza Rd.
Biology Dept.

Dear Sir:

It has been recently brought to my attention that the city of Las Vegas, Nevada is planning to commercialize the Red Rock Canyon area. This is a terrible mistake on the part of the planners of this development.

The Red Rock Canyon area has some very rare mosses and ferns in its vicinity, and most likely, many types of undiscovered types of plant growth also.

The city of Las Vegas should not should not try to commercialize this area, as it would destroy much of the natural beauty of Nevada, particularly Las Vegas. If the city just lets this area set, it will surely be destroyed by litter or uninformed tourists who walk and drive over these rare plants.

I believe an alternative to your plan would be to turn this area into a state or national park. The area would be there for all people to see, but park rangers would be there to protect it also.

At least, in the fairness to the city of Las Vegas and its residents, open your discussion to the public. We will then see what the public wants, and I'm sure you want to do what the public wants.

Truly yours,

Jim Bernabei

Jim Bernabei
Biology Dept.

ROUTE	ACTION	INIT.	DATE
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CAL. R.A.			
ESMER. R.A.			
[illegible]		Kp	5/3/74

FILE CODE

1 - ACTION 2 - INFOR.

Dear Sir:

I am writing to support the Wilderness proposal for the entire Red Rock Canyon. I feel that,for the welfare of all people, restrictions should be placed on this area... and as soon as possible.

Ideallisticly, I am against all types of restrictions because they tend to stifle good activities as well as bad ones. But I cannot support a policy, like the existing one, that allows for the destruction of the Red Rock environment.

The Wilderness concept is, in my judgement, the best kind of designation for an area like Red Rock. To be effective though, the Wilderness idea must be understood by those users of Red Rock.The pattern seems to run that man ultimately destroys what he doesnt understand. I would surely hate to see the Red Rock Canyon ruined.

A concerned citizen,

Liz Foley

Bureau of Land Management
MAY 1 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

ROUTE	ACTION	[illegible]	DATE
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STATE R.A.		[illegible]	
CAL. R.A.			
ESMER. R.A.			
[illegible]		[illegible]	5/3/74

Jerry Chernik
4477 Ridgedale
LV, Nev.
89121

John S. Boyles
District Mgr.
Bureau of Land Management
LV District
P.O. Box 3
LV, Nev. 89101

Bureau of Land Management
MAY 2 1974
Las Vegas
District Office
Las Vegas, Nevada

Dear Sir:

This is to inform you that I as
well as many others I know AM against
ANY development whatsoever in the
entire Red Rock area. We want it
left solely as it is without even so
much as a pebble overturned forever!!!
Hell- I know you guys- you lost out
with Fletcher Jones; so now you tell
us, "Oh let's just put in some camping
facilities (benches, fire pits etc) for public
convenience"; then after that you'll say, "Let's
put in a road for easier travel"; then
"Let's have a traffic signal installed and→

oh wouldn't a bar and grill be super!"
Hell I know you guys and your SCAMS! You couldn't get Red Rock fucked up the fast way, so now you're trying the subtle approach — forget it. Red Rock is a beautiful place — leave it alone — PERIOD!!

Jerry Chernak

P.S. I want to personally here your comments on the matter. A letter would be appreciated.

ROUTE	ACTION	INIT.	DATE
D.M.			
CH., R.M.			
CH., OPER.			
ADMIN.			
RANGE			
L & M			
FIRE			
STATE R.A.			
CAL. R.A.			
ESMER. R.A.			
Salenchi		[illegible]	5/3/74

FILE CODE

1 - ACTION 2 - INFOR.

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

These letters were written by third grade class at O.K. Adcock for their letter writing project in English.

They have done a good job expressing themselves. Please overlook misspelled words.

Room #24

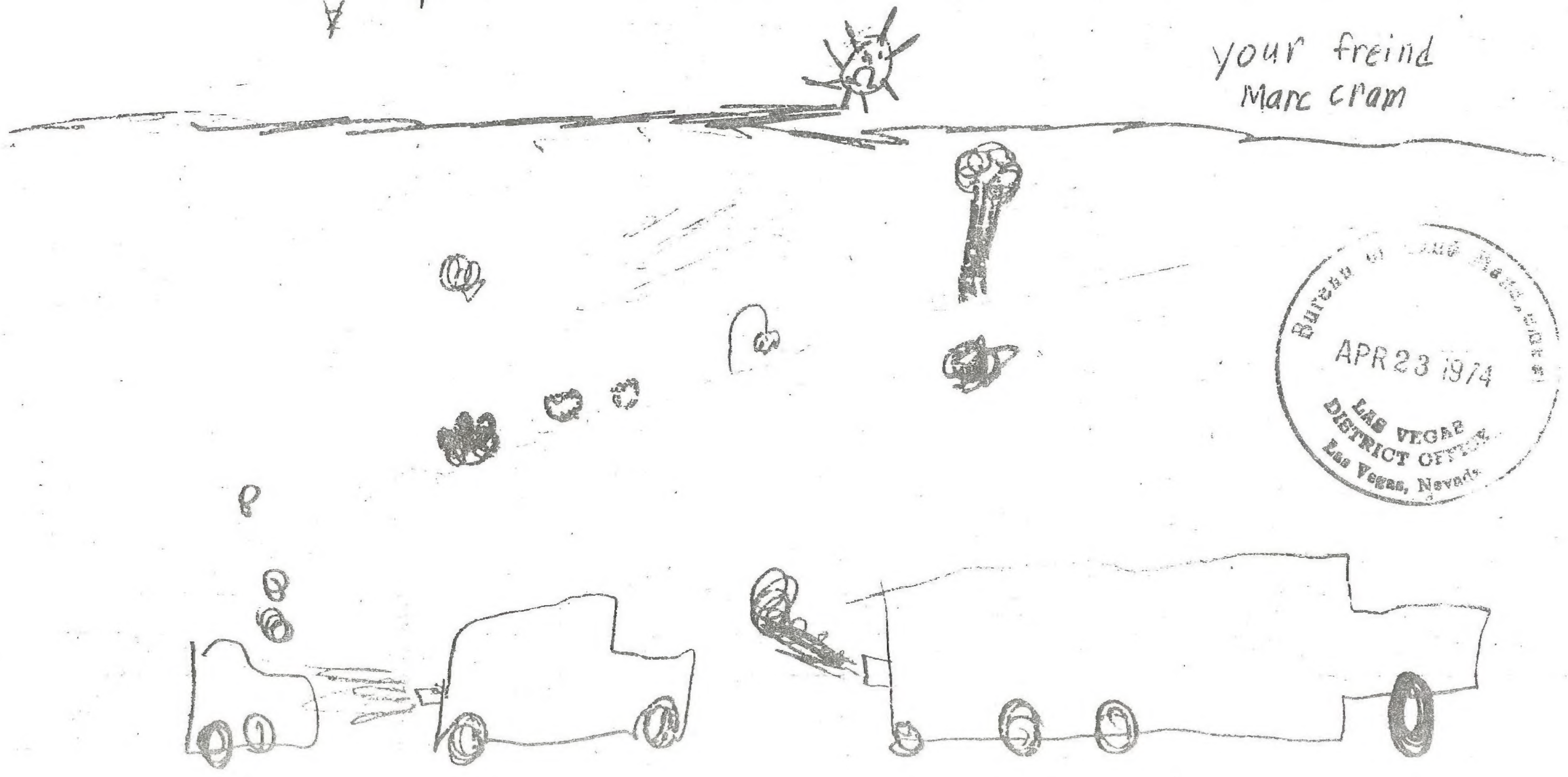
ROUTE	ACTION	INIT.	DATE
D.M.			
CH., R.M.			
CH., OPER.			
ADMIN.			
RANGE			
L & M			
FIRE			
STATE R.A.			
CAL. R.A.			
ESMER. R.A.			

FILE CODE________

1 - ACTION 2 - INFOR.

Dear sir
I think we should not throwaway our wildlife
in redrockcanyon. The binds will haveto runaway.
Think about the smoke and the trach and the smell!
The eggs will die from the smoke.
We want to save gas so we betur not build highways.
The eggs are white now. If you buill roads the eggs will
brown or black the trees will be black the sky will be black. We have more smoke
each day. well itis your decison. The plants will be black.

your freind
Marc cram



Bureau of Land Management
APR 23 1974
LAS VEGAS DISTRICT OFFICE
Las Vegas, Nevada

Friday, APRIL

Bureu of land Managem-
ept
Las Vagas, Nevada

Dear Sir,

PleaseLeave Redk Rock Canyon
The way it is.

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

From Paula Slocum

Friday, April 19

Bureau of Land Management
Las vegas, Nevada

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Dear Sir

I would like you to leave Red Rock Canyon alone. I would like you to leave it alone because then I can go there to have peace and quiet when I go there and when lots of people start coming then there will be (Pollution) in the air and on the ground. So please leave it alone. And ((PLEASE)) don't Buld any Buldings or trails or roads.

John
Hintz

Friday, April [illegible]

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Bureau of Land Management
Las Vegas, Nevedy

Dear Sir,

Please Leave Red Rock Canyen the way Nature left it. There will be more pollution.

From Jeff Edwards

Friday, April 19,

Bureau of Land Managment
Las Vegas, Nevada

Dear Sir,

Keep Red Rock Canyon the way it is. Mother nature made it the way she want it. I think it looks good the way it is now. If you put highways, it will pallute the air, and knowbody will want to go there anymore so please leave it the way it is now.

your friend,
Sheri Somers

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Friday, Apr. 19,

Bureau of land Managment
Las Vegas, Nevada

Dear Sir,

Please keep Red Rock Canyon the way it is. Some people go to Red Rock Canyon for peace and quiet. If you put hiking trails, there will be more people and pollution. If you put hiking trails I'll never go to Red Rock Canyon. Because of pollution, trash, and smog.

Your Friend,

DeAnn Baker

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Firday, April 19

Bureau of Land Management
Las Vegas, Nevada

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Dear Sis, Please

I Love
Red Rock Canyon I
hope you Leave it like
it look? you might pollution
the air?

Gregory Peeple

Friday, April 19,1974

Bureau of Land Managment
Las Vegas Nevada

Dear Sir,

Would you please put a hiking trail in the Red Rock Canyon. But please don't put highways. Because there would be to much pollution.

Your friend

Marsena Beck

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Friday, April 19,

Bureau of Land Management
Las Vagas, Nevada

Dear sir Leave Red Rock canyon as it is put up some sins that sess No fishing or No hunting do you know why because there will be pollution and litter. Some people doen't pick up there Trash and stuf that they leave be hine. Please leave it a lone. O.K?

Bureau of Land Management
APR 23 1974
LAS VEGAS DISTRICT OFFICE
Las Vegas, Nevada

Dear Sir,

By David Gray

Friday, April 19,

Burea of Land Management
Las Vegas, Nevada

Dear Sir
I am not very happy because Red Rock might be made that way! And about, 1600 people want it left that way. Please leave Red Rock the way nature left it.

Your friend,

Kelly Shawn Mack

DISTRICT OFFICE
Las Vegas, Nevada

Friday April, 19

Bureau of Land Management,
Las Vagas, Navda

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Dear sir,

I would like red rock canyon to stay like it is. Because thir will be more pollutioned in red rock. And more people and it will be crowded. So people won't injoy it. Please leave it alon please!!!!

Roxella Wills

Bureau of Land Management
Las Vegas, Nevada

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Deir Sir,

I want you to chinge Red Rock Canyon road. Becuase onee my brother and my Dad and me crashed.
The roads are to curvy. And my Dads car is broke and he had to sell it.
So Please change it.

by Mark W.

Friday April

Bureau of Land Management
APR 23 1974
Las Vegas
District Office
Las Vegas, Nevada

Bureau of Land Management
Las Vegas Nevada

Dear Sir

Will you please leave Red Rock Canyon the way it is please it mitht pollution the air I don't want it to do that Sir

by

Sharon Brown

Friday, april 19,

Bureau of Land Management
Las Vegas, Nevada

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Dear sir,

Leave it like it is.
it Look pretty.
please don't mess with it.
I who you don't mess with it.
Leave it along. Girl scout.
dont mess with it. Boy scout.

Lelia Lynette taylor,
thank you.
my friend

Friday, April [illegible]

Bureau of Land Management
APR 23 1974
LAS VEGAS DISTRICT OFFICE
Las Vegas, Nev.

Bureau of Management
Las Vegas, Nevada

Dear Sir,

Please will you leave Red Rock canyon like it is. If you put that highway there will be more pollution.

and to nosie and people like it like it is so do I. and we like to have picnics. and to much people will come at one time. and scouts like to camp out there, and more people will be killed by the cars.

Your friend,
Cathy Abraham

Firday, aPirl 19,

[illegible]

Bureau Of Land Management
Las Vegas. Nevada.

Bureau of Land Management
APR 26 1974
Las Vegas District Office
Las Vegas, Nevada

Dear Sir,

Red Rock Canyon is a nice place. pease leav it Like it is because that is the only place My family Nos Where to have a picknick, and beside I Like Red Rock Canyon. and There Will be to muck pollatsine and the peple that don't Want you too. Won't go up there

turn OVer

My family Likes to go up there. plase, please, Don't Bild houses up there. ~~[illegible]~~ Liev it Like it is. Because Girl Scots go hiking up there. good By

Janette O'neiL

Friday, April 19,

Bureau of Land Management
Las Vegas, Nevada

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, N

Dear Sir,

I think that you should leave Red Rock Canyon the way it is. My reason is that, Girl Scouts, Boy Scouts, P[illegible] and Brownies like to go out there for trips. Familys like to also. If you change it there will be more pallution, And more recks.

Your friend
Trisha Stone

Friday, April 19,

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT
Las Vegas

Bureau of Land Management
Las Vegas Nevada

Dear Sir,
Will you please leave Red Rock Canyon like it is? It looks pretty the way it is. I like it because you can have some fun alone, with your faimly. If you build things out there, There will be more pollution. And some people would litter too.

Your freind

Angie

Stickelmaier

Friday April 11,

Bureau of Land Management
Las Vegas, Nevada

Dear Sir,

Will you please leave Red Rock Canyon the way it is. If you don't, it will get crowded an pulluted, and people won't come any more. And then more of America will be pulluted. And people will get sick, a some people won't have anyone to play with. And thas's why I don't want you to change Red Rock Canyon.

from
your
friend
Eric Randall Johnson

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Friday April 19,

Bureau of Land Management
Las Vegas, Nevada

Bureau of Land Manag...
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Dear Sir,

Leave Red Rock Canyon the way it is. Because if to many cars come out there it will be pollued. That is why.

Gary Serna.

Bureau of Land Managment [illegible]
Las Vegas, Nevada

Bureau of
APR
Las
DIST
Las Ve

Dear sir,
Leave Red Rock Canyon
like it is because [redacted] me.
people [illegible] pollution
[illegible] it won't be so pretty
[illegible] ow so they
will allcome and [illegible]
[illegible] and they will
[illegible]

from Jimmy [illegible]

Friday, April 13, 77

Bureau of Land Management
Las Vegas, Nevada

Dear Sie,

Leave Red Rock Canyon the same. If thar are roades and cars thare will be more pollution. People will pollution it. Not very long and you will probably wont to go on a picknick and it will be pollution.

Yure freind Dave Turner

Friday, April 19,

Bureau of Land Management
Las Vegas, Nevada

Bureau of Land Management
APR 23 1974
LAS VEGAS DISTRICT OFFICE
Las Vegas, Nevada

Dear Sir,

Put a hiking trails Red Rock Canyon so the boy scouts and the cub scouts can go hiking on there cub scouts trips.

Jon Trombetti,

4/19/74

Bureau of Land Management
Lav Vavags, Nevda

Bureau of Land Management
APR 2[illegible] 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Dear Sir,

I think you shold leave Red Rock Can you alon. Becuse if you put roads that means more cars and that gos into more pollution. And more most. And thats why.

Stephen Ronan

~~Frida~~ Friday April 19,

Bureqv of land Manigement
Las vegus, Navadu

Dear Sir

I please dont want you to build anything bulding. because then it would be to crould.

Please put a bicikle trail

Bureau of Land Management
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

you freind
steve

Friday, April 19,

Bureau of Land Management
Las Vegas, Nevada

Bureau of Land Manag...
APR 23 1974
LAS VEGAS
DISTRICT OFFICE
Las Vegas, Nevada

Dear Sir,

I think that you should leave Red Rock Canyon like it is. Because the cars will make pollution. And if we have trails people woulde have to use cars to get there. And if cars go there, there will be noise.

BUREAU OF LAND MANAGEMENT
Library
Denver Service Center

Form 1279-3
(June 1984)

SB 481
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